UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL

ESCOLA DE ADMINISTRAÇÃO

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DOCTORATE IN APPLIED ECONOMIC SCIENCES

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COGNITIVE, EMOTIONAL, AND BEHAVIORAL REACTIONS TO SERVICE FAILURES

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Dissertation submitted to the Post-graduation Program in Management, Federal University of Rio Grande do Sul, and the Faculty of Economics and Business Administration, Ghent University, in fulfillment of the requirements for the degrees of Doctor in Management and Doctor in Applied Economic Sciences.
Supervisor: Prof. dr. Cristiane Pizzutti dos Santos
Co-supervisor: Prof. dr. Maggie Geuens

Porto Alegre

2016

Natália Araújo Pacheco

COGNITIVE, EMOTIONAL, AND BEHAVIORAL REACTIONS TO SERVICE FAILURES

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Work hard. Aim high. Play fair. Help others.

H. Jackson Brown, Jr.

ABSTRACT

Given the pervasive nature of service failures and their harmful consequences, it is important to understand how customers react to them. This doctoral dissertation addresses some of the customers' cognitive, emotional, and behavioral reactions to service failures. More specifically, it investigates customers' causal attributions, appraisals, and perceived control as cognitive reactions, as well as a wide range of emotional (e.g., regret, anger, disappointment, etc.) and behavioral reactions (e.g., switch, complaint, negative word-of-mouth, and others). This dissertation presents three different researches within the scope of customers' reactions to service failure. The first research introduces the temporal model of perceived control from psychology to service research and compares its explanatory power for customer emotional and behavioral reactions with the ones of the widely used causal attribution and appraisal models. Three surveys and one experiment are conducted. The results show that for some customers' reactions (e.g., regret and switch), the temporal model of perceived control has explanatory power over and above the traditionally used causal attribution and appraisal models. This research also shows that the temporal model of perceived control may be combined with the causal attribution and appraisal models to achieve higher explanatory power. The second research investigates whether failed co-produced services lead to more internal or external causal attribution (i.e., whether the blame is attributed to the customer or the service provider) and how it affects customers' regret, disappointment, and dissatisfaction. Two experiments are conducted. The results indicate that failed co-produced services lead to more internal attributions than failed services that were not co-produced. Failed co-produced services also lead to lower levels of disappointment and dissatisfaction without elevating customer's regret level. The results also show that in case of causal uncertainty (i.e., when the customer is not sure about who caused the failure), customers who co-produced experience the same high level of regret of customers who have caused the failure, contradicting the literature that states that causal uncertainty leads to reduced emotional intensity. The third research investigates whether customers' thought speed affects causal locus attribution for services failures as well as customers' emotional and behavioral reactions. Four experiments are conducted. The results suggest that customers who think faster make more external attributions for service failures (i.e., attribute more blame to the service provider) than customers who think slower. It seems that thought speed has no effect on customers' emotional and behavioral reactions though. According to the results, the induced differences in thought speed tend to be short-lived.

Overall, these three researches offer insights into some of the things that customers think, how do they feel and act in response to service failures. Theoretical and managerial implications are discussed at the end of each research and recapitulated in the conclusions chapter.

RESUMO

Devido à natureza onipresente das falhas de serviço e suas consequências nocivas, é importante compreender como os clientes reagem a elas. Esta tese de doutorado explora algumas das reações cognitivas, emocionais e comportamentais dos clientes em relação a falhas de serviço. De maneira mais específica, a tese investiga atribuições causais, avaliações e controle percebido dos clientes como reações cognitivas, assim como uma ampla variedade de reações emocionais (p.ex., arrependimento, raiva, decepção, etc.) e comportamentais (p.ex., troca, reclamação, boca-a-boca negativo, entre outros). Esta tese apresenta três diferentes pesquisas dentro do escopo de reações do cliente a falhas de serviço. A primeira pesquisa traz o modelo temporal de controle percebido da psicologia para a área de serviços e compara o seu poder de explicar reações emocionais e comportamentais do cliente com o poder explanatório dos modelos de atribuição e de avaliação amplamente utilizados. Três *surveys* e um experimento são realizados. Os resultados mostram que, para algumas reações dos clientes (p.ex., arrependimento e troca), o modelo temporal de controle percebido tem poder explanatório superior ao poder dos modelos de atribuição causal e de avaliação tradicionalmente utilizados. Esta pesquisa também demonstra que o modelo temporal de controle percebido pode ser combinado aos modelos de atribuição causal e de avaliação para atingir maior poder explanatório. A segunda pesquisa investiga se falhas em serviços coproduzidos levam a uma atribuição causal mais interna ou externa (i.e., se a culpa é atribuída ao cliente ou ao prestador de serviço) e como isto afeta arrependimento, decepção e insatisfação do cliente. Dois experimentos são realizados. Os resultados indicam que falhas em serviços coproduzidos levam a uma atribuição mais interna que falhas em serviços não coproduzidos. Falhas em serviços coproduzidos também resultam em menores níveis de decepção e insatisfação sem elevar o nível de arrependimento do cliente. Os resultados também apontam que, em caso de incerteza causal (i.e., quando o cliente não está seguro sobre quem causou a falha), clientes que coproduzem sentem o mesmo alto nível de arrependimento de clientes que causaram a falha, contradizendo a literatura que afirma que incerteza causal leva à redução da intensidade emocional. A terceira pesquisa investiga se a velocidade do pensamento dos clientes afeta a atribuição de lócus causal para falhas de serviço bem como as reações emocionais e comportamentais dos clientes. Quatro experimentos são conduzidos. Os resultados sugerem que clientes que pensam mais rápido fazem atribuições causais mais externas que clientes que pensam mais devagar. Aparentemente, a velocidade do pensamento

não tem efeito nas reações emocionais e comportamentais dos clientes. De acordo com os resultados, as diferenças de velocidade de pensamento que foram induzidas tendem a ter curta duração. Em geral, estas três pesquisas oferecem *insights* sobre algumas das coisas que os clientes pensam, como eles se sentem e agem em resposta a falhas de serviço. Implicações teóricas e gerenciais são discutidas ao final de cada pesquisa e sintetizadas no capítulo de conclusões.

SAMENVATTING

Gezien de grote impact en schadelijke gevolgen van service blunders, is het belangrijk om te begrijpen hoe klanten hierop reageren. Dit proefschrift behandelt enkele van de cognitieve, emotionele en gedragsmatige reacties die klanten kunnen vertonen na dergelijke service blunders. Meer specifiek worden klanten hun causale attributies, beoordelingen en gepercipieerde controle als cognitieve reacties onderzocht, evenals diverse emotionele (bv. spijt, woede, teleurstelling, enz.) en gedragsmatige reacties (bv. veranderen van dienstverlener, indienen van een klacht, verspreiden van negatieve mond-tot-mond reclame, enz.).

Dit proefschrift omvat drie verschillende onderzoeken in het kader van klantenreacties op service blunders. Het eerste onderzoek introduceert het tijdsgebonden model van gepercipieerde controle ('the temporal model of perceived control') vanuit psychologisch naar service onderzoek en vergelijkt de verklaringskracht ervan wat betreft emotionele en gedragsmatige reacties met deze van het frequent gebruikte causale attributiemodel en beoordelingsmodel ('appraisal model'). Drie enquêtes en één experiment worden uitgevoerd. De resultaten tonen aan dat voor sommige klantreacties (bv. spijt en veranderen van dienstverlener), het tijdsgebonden model van gepercipieerde controle meer verklaringskracht heeft dan het traditioneel gebruikte causale attributiemodel en beoordelingsmodel. Dit onderzoek toont ook aan dat door het combineren van de drie modellen een hogere verklaringskracht kan bekomen worden.

Het tweede onderzoek gaat na of blunders begaan bij gezamenlijk geproduceerde diensten ('co-production services') tot meer interne of externe causale attributie leiden (d.w.z., of de schuld bij de klant dan wel bij de dienstverlener gelegd wordt) en hoe dit klanten hun gevoelens van spijt, teleurstelling, en ontevredenheid beïnvloedt. Twee experimenten worden uitgevoerd. De resultaten geven aan dat blunders in een service die gezamenlijk geproduceerd werd tot meer interne attributies leiden dan blunders in een service die niet gezamenlijk tot stand kwam. Blunders in een gezamenlijk geproduceerde service leiden ook tot minder teleurstelling en kleinere ontevredenheid zonder dat de klanten meer spijt ervaren. De resultaten tonen verder ook aan dat, in geval van causale onzekerheid (d.w.z., wanneer de klant niet zeker is wie de blunder veroorzaakt heeft), klanten die een service mee tot stand gebracht hebben evenveel spijt ervaren dan klanten die de blunder veroorzaakt hebben. Dit resultaat is in tegenstelling met de literatuur die veronderstelt dat causale onzekerheid een lagere emotionele intensiteit teweeg brengt.

Het derde onderzoek gaat na of de snelheid waarmee klanten hun gedachten vormen (‘thought speed’) een invloed heeft op causale attributies, emotionele en gedragsmatige reacties naar aanleiding van een service blunder. Vier experimenten worden uitgevoerd. De resultaten suggereren dat klanten die sneller denken meer externe atttributies maken voor service blunders (d.w.z., ze leggen meer schuld bij de dienstverlener) dan klanten die trager denken. Snelheid van denken lijkt echter geen effect te hebben op klanten hun emotionele en gedragsmatige reacties. De resultaten wijzen ook aan dat de opgewekte verschillen in snelheid van denken van korte duur zijn.

Over het geheel genomen, bieden de drie onderzoeken bijkomende inzichten in bepaalde dingen die klanten denken, hoe ze zich voelen en hoe ze reageren ten gevolge van een service blunder. Theoretische en praktische implicaties worden aan het einde van elk onderzoek bediscussieerd en gerecapituleerd in het hoofdstuk ‘Conclusies’.

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1 ON THE STRUCTURE OF THIS DISSERTATION

The current dissertation is the outcome of a joint doctorate of the author at the Federal University of Rio Grande do Sul (Brazil) and Ghent University (Belgium). According to the cooperation agreement for this joint doctorate, the doctoral dissertation must combine the content and structure usually required by each of the universities (e.g., chapters' structure and amount of studies). This combination of structures result in a document slightly different from the ones usually evaluated by each member of the examination board. In spite of the different structure, there is a strong commitment to present a relevant theoretical contribution based on sound literature reviews and empirical investigations.

Doctoral dissertations from the Federal University of Rio Grande do Sul usually have one research question, one general goal, and a few specific goals in the introduction chapter. The other chapters contain theoretical background, empirical studies, and discussion to answer such research question and goals. The entire dissertation addresses the same investigation in extreme depth, whereas the doctoral dissertations from the Ghent University usually deal with more investigations, subdivided in articles. Each article represents one chapter of the dissertation and has its own goals, theoretical background, empirical studies, and discussion.

The present dissertation combines both universities model: it adopts the article structure from the Ghent University, but the first article has a more extensive theoretical background, similar to other dissertations from the Federal University of Rio Grande do Sul, while the second and third articles are not as extensive as the first, more in line with the tradition of the Ghent University. The three articles consist of investigations about the general topic of service failures. Each one of these articles constitutes one chapter of the dissertation and is composed of a literature review and empirical studies. The dissertation is written in English, following the American Psychological Association (APA) referencing style.

2 INTRODUCTION

This introductory chapter is organized as follows. First, the common theoretical framework for the three articles/chapters is introduced: service failures and attribution theory. Then, each one of the chapters is explained.

2.1 SERVICE AND FAILURES

The services sector accounts for the major part of the world's gross domestic product – over 70% in most stablished economies (Bitner, 2014). The services sector and service research are considered of great importance to the success of business and to the welfare of society (Bitner, 2014). Service has grown so much in importance that it has been considered as the fundamental unit of exchange for any offer in the Service-Dominant Logic (Vargo & Lusch, 2004). This means that even when buying a physical good such as a computer, customers are in fact acquiring applied knowledge and skills (i.e., service) (Lusch, Vargo, & O'Brien, 2007).

Rather than focusing on service as the fundamental unit of exchange as done in the Service-Dominant Logic, the current dissertation focuses on services like those that compose the so called service sector (e.g., retail, restaurants, hospitals, etc.). Of special interest are those services that result in failure. According to Abramson, Seligman, and Teasdale (1978), failure refers to not obtaining a desired outcome. Thus, service failure refers to not obtaining a desired outcome from a service.

Failures are a reality in the service industry and by no means can their occurrence be fully prevented (Joireman, Grégoire, Devezer, & Tripp, 2013). The large amount of customer complaints on websites such as consumeraffairs.com (USA), reclameaqui.com.br (Brazil), and other similar websites indicate that service failures are very common. Although service failures are not as certain as death and taxes, every one of us has already faced service failures or has close friends/relatives who faced it. This shows that service failures are almost inevitable for customers. Some of these failures lead customers to get angry with the service provider, ruminate about the failure, and seek revenge (Grégoire, Laufer, & Tripp, 2010; Strizhakova, Tsarenko, & Ruth, 2012).

The very nature of services make them susceptible to failures. For instance, most services are heterogeneous because their performance varies from provider to provider and from

customer to customer (Parasuraman, Zeithmal, & Berry, 1985). This heterogeneity or variability may lead to failures since a standard outcome is hard to get. Also, production and consumption are inseparable in most services (i.e., production and consumption occur simultaneously) (Lovelock & Gummesson, 2004; Parasuraman et al., 1985). Therefore, it is difficult to check the service quality and correct potential mistakes before its delivery.

The concept of service failure is closely related to dissatisfaction, which derives from negative expectancy disconfirmation (e.g., when service performance is worse than expected) (Anderson, 1973). A dissatisfied customer may experience negative emotions such as regret, disappointment, anger and so forth (Cho & Song, 2012; Joireman et al., 2013; Zeelenberg & Pieters, 2004). Customer dissatisfaction and the negative emotions associated with it may lead to a variety of behavioral reactions, such as complaining to the responsible for the failure (e.g., service firm, retailer, manufacturer, etc.), engaging in negative word-of-mouth, complaining to a third party (e.g., newspapers, legal agencies), engaging in retaliatory behavior (i.e., actions to punish a firm), switching from service provider, and doing nothing at all (Cho & Song, 2012; Joireman et al., 2013; Singh, 1988; Zeelenberg & Pieters, 2004).

Customers may consider service failures to be stressful. Duhachek (2005), Moschis (2007), and Stephens and Gwinner (1998) argue for a stress subjective view. According to these authors, the same service failure (e.g., a rude treatment by a service employee or a lapse in service) may be stressful to some customers but not stressful to others. According to Cohen, Kamarck, and Mermelstein's (1983) perceived stress scale, stress is associated with irritating life hassles, feeling upset about something that happened unexpectedly, feeling unable to control important things, feeling nervous and angry because of things outside one's control, feeling unable to overcome difficulties, etc. Similarly, in a service context, stressful situations could be those that make customers feel irritated, powerless, nervous, and angry. This implies a fairly high negative arousal that is not necessarily present in all service failures. Customers have several ways to cope with stress, such as complain, defer buying or shopping, seeking social support, venting rage, controlling one's feelings, among others (Moschis, 2007).

Both stressful and non-stressful service failures are worth of investigation as they may engender negative emotional and behavioral customer reactions. It is important to understand other factors that may affect such customer reactions in order to get a more complete picture of the consequences of service failures. For instance, customer complaint behavior may offer firms a chance to gather information and respond to a failure – a second chance for firms to get it right (Prim & Pras, 1999) – but it may also turn product and brand evaluations more negative when customers blame themselves for a failure (Dunn & Dahl, 2012). Such product and brand

negative evaluations come from a need to reestablish customers' self-worth, shifting blame from internal to external sources (Dunn & Dahl, 2012). This example illustrates how important it is for firms to understand the factors that lead to customer emotional and behavioral reactions after a service failure as well as how such factors work and what are their consequences.

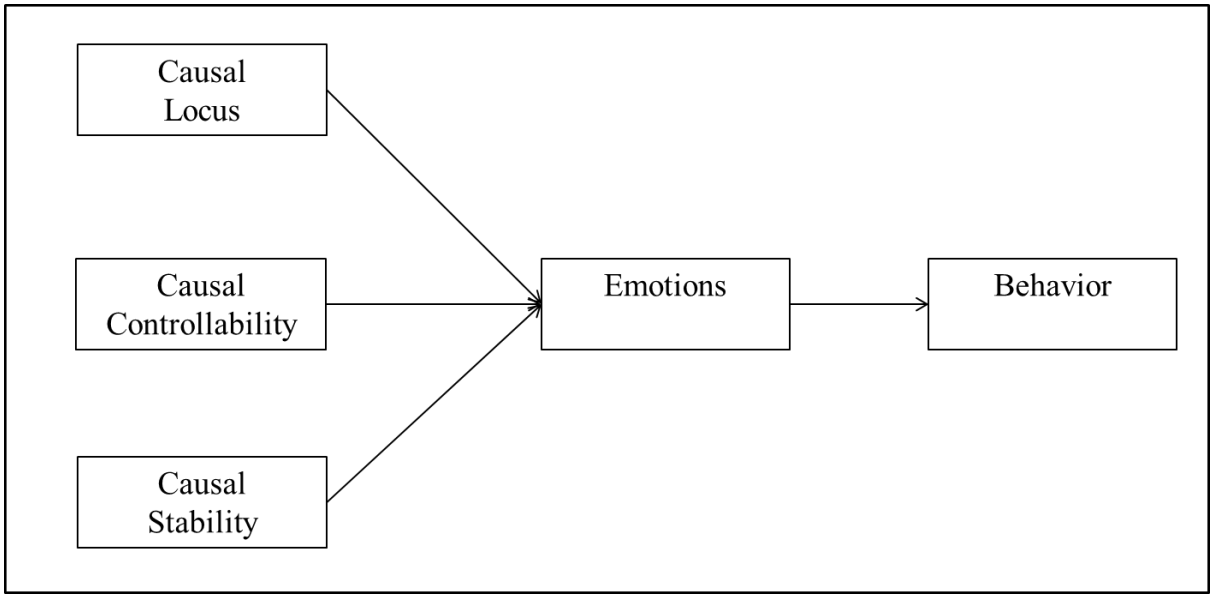
Besides emotional and behavioral reactions, service failures also lead to cognitive reactions such as causal attributions, appraisals, and perceived control. In fact, the expected order of customer response after service dissatisfaction is cognitive reactions affecting emotional reactions which, in turn, lead to behavioral reactions (Hui & Bateson, 1991; Lazarus, 1991b; Rompay, Galetzka, Pruyn, & Garcia, 2008; Smith, Haynes, Lazarus, & Pope, 1993; Weiner, 2000).

This dissertation investigates customers' cognitive, emotional, and behavioral reactions to service failures. In particular, we analyze the potential effects of co-production and thought speed on customers' cognitive reactions (i.e., causal attributions) to service failures, and the effects of cognitive reactions (i.e., causal attributions, appraisals, and perceived control) on customers' emotional and behavioral reactions to service failures. Besides service failures, another topic present throughout the current dissertation is causal attributions. Next section provides a literature review on attributions, while appraisals and perceived control will be addressed in chapter 3.

2.2 ATTRIBUTION THEORY

Attribution theory refers to the attributed cause of an event, state, or result, focusing on three causality properties: causal locus, causal controllability, and causal stability (Weiner, 2000, 2010). Causal locus refers to the cause being located inside or outside the agent, which in the context of service failures means the cause being attributed to the customer or the service provider, for example. Causal controllability refers to the cause being volitional or not, which in the case of service failures may be associated with the customer's or company's ability of having prevented the cause of the failure, while causal stability refers to the cause being considered stable or unstable (Folkes, 1984; Weiner, 2000, 2010). Such causal properties affect customer emotional and behavioral reactions as shown in Figure 1 (Weiner, 2000, 2010).

Figure 1 – Causal Attribution Model



According to Weiner (2000), the search for attributions is more frequent after a failure than after a success. Therefore, attribution theory may be helpful to understand and predict customer reactions to service failures.

Regarding an internal causal locus – that is, when the customer attributes to him/herself the cause of a failure – emotions like guilt, embarrassment, shame, and regret can be experienced (Weiner, 2000, 2010; Zeelenberg, van Dijk, Manstead, & der Pligt, 1998). When the customer is dissatisfied with a product he/she has chosen, this customer may feel guilty and regretful if the cause is attributed to an internal and controllable factor, such as a bad choice due to lack of attention or effort. On the other hand, the customer may feel embarrassed and ashamed when the cause is attributed to an internal and uncontrollable factor, such as the lack of ability to choose between a good and a bad choice (Weiner, 2000, 2010).

An external causal locus – when the customer attributes the cause of a failure to a company or employee – combined with causal controllability can lead to the experience of anger. If a customer buys a cereal of which s/he dislikes the taste, this customer may be dissatisfied and even frustrated, but it is not likely that he or she would be angry with the cereal producer since there was neither intention to harm the customer nor negligence. However, if a customer finds a bug in the cereal, this customer is likely to feel angry with the cereal producer due to its negligence (Weiner, 2000). So, anger is associated with external controllable negative outcomes, while frustration is associated with external uncontrollable negative outcomes (Bougie, Pieters, & Zeelenberg, 2003; Folkes, 1984; Weiner, 2000).

Causal stability, in turn, refers to future expectations about (dis)satisfaction with a product. A stable attribution for the cause of a failure leads to a decrease of the likelihood of future satisfaction, which can be associated with fear, which, in turn, may affect customer behavior (e.g., choice and recommendation) (Weiner, 2000).

Causal attributions are one type of cognitive reactions to service failures. Customer perceived control and appraisals are the two other cognitive reactions that will be investigated in this dissertation (but only in chapter 3). Next section gives some details about the contents of each article of this dissertation, explaining the novelty and relevance of each investigation.

2.3 DISSERTATION OUTLINE AND JUSTIFICATION FOR EACH ARTICLE

The current dissertation is divided into three different articles within the scope of customers' reactions to service failures. Each article is detailed in a different chapter. Each article addresses investigations that are relevant and novel in some aspect.

In chapter 3, "The Role of Perceived Control, Causal Attributions, and Appraisals in Stressful Service Experiences," there is an investigation regarding whether the temporal model of perceived control introduced by Frazier et al. (2011, 2012) is relevant in the context of stressful service episodes. The model was originally developed to get a better understanding of people's responses in extreme stressful life events (e.g., relationship conflicts and bereavement), but it has not been tested in a service context. According to the authors, people's perceptions that they could have done something to prevent a stressful event (past control), that they can control their own emotions and thoughts about it right now (present control), that they can prevent it from happening again (future control), and that such situation is unlikely to reoccur (future likelihood) are important determinants of distress. Three surveys were conducted to test whether this model has additional explanatory power regarding customer emotional and behavioral reactions after a stressful service experience when compared to the typically used attribution (Weiner, 1985; 2000) and appraisal models (Lazarus, 1991b; Smith et al., 1993). Also, one experiment was conducted to test the influence of perceived past control on emotional and behavioral reactions when causal locus attribution is external.

The novel aspect of this chapter is the use of a model of perceived control that has not been used in customer behavior or services marketing research yet, and its comparison to the widely used attribution and appraisal models. Just like attributions and appraisals, perceived

control refers to cognitions about something (e.g., an event, an undesired outcome, or a stressful situation) which, in turn, lead to emotional and behavioral reactions (Hui & Bateson, 1991; Rompay et al., 2008).

However, unlike the attribution model, the temporal model of perceived control provides a deeper understanding about the role played by customers regarding service failures. For example, asking whether one could have prevented or will be able to prevent an event (i.e., past and future perceived control, respectively), is different than asking who caused an event or whether the cause is controllable by someone (i.e., causal locus and controllability attributions). Most of research on service failures focus on external attributions (service provider's fault) and whether service providers could have prevented the failure (e.g., Folkes, Koletsky, & Graham, 1987; Hess, Ganesan, & Klein, 2003, 2007; Huang, Lin, & Wen, 2010; Taylor, 1994; Wirtz & Mattila, 2004), neglecting the role of customers in such failure.

The appraisal model allows for the investigation of customers' role in a service failure because it examines self-accountability (whether the customer was responsible for the failure) and problem-focused coping potential (whether the customer can act to make the situation better). However, the temporal model of perceived control distinguishes itself from the appraisal model as the former allows for a focus on customers' role not only in the past (when the service failure occurred) but also in the present and future. These differences compared to the attribution and appraisal models make the investigation of the temporal model relevant. It consists of a different way of looking to service failures, different cognitive reactions that may influence customers' emotional and behavioral reactions. More importantly, though, there is no need to choose among the use of the temporal model, attribution, or appraisal models. The temporal model may be used together with attributions or appraisals because they measure different (and complementary) cognitions.

In chapter 4, "Co-Production and Causal Locus Attribution", there is an investigation about the effects of co-production on causal locus attribution following service failures. Co-production is defined as customer participation in production activities that generates a result to be consumed (Etgar, 2008). So far, the literature on whether customers who co-produce will make more external (i.e., blame others) or internal (i.e., blame themselves) attributions after service failures is contradictory and inconclusive. For instance, findings that a high level of co-production leads to more internal attributions than a lower level of co-production (Heidenreich, Wittkowski, Handrich, & Falk, 2015) contradict findings from Jong-Kuk, Min-Sook, Mi-Ok, and Mi-Ri (2010). Therefore, study 1 investigates the influence of co-production on customer causal locus attribution. Because people may be uncertain about causal attributions (Choi &

Mattila, 2008; Weary & Jacobson, 1997) and it may be hard to attribute a failure to the service provider or the customer in some situations, study 2 investigates the influence of uncertain locus attribution (as well as internal and external attributions) on regret, disappointment, and dissatisfaction.

The novel aspect is that previous research addressing the influence of co-production on causal locus attribution (i.e., Heidenreich et al., 2015; Jong-Kuk et al., 2010; Yen, Gwinner, & Su, 2004) has neither addressed the influence of co-production on regret nor has examined the effects of uncertain causal locus attribution. The relevant aspect is that recent service literature calls for the understanding of how different emotions emerge in co-production contexts (Fliess, Dyck, & Schmelter, 2014). Also, because co-production is ubiquitous, understanding customers' attribution process may help academics and practitioners to predict customers' reactions to service failures (Jong-Kuk et al., 2010). This chapter adds to the scarce amount of empirical studies on the subject.

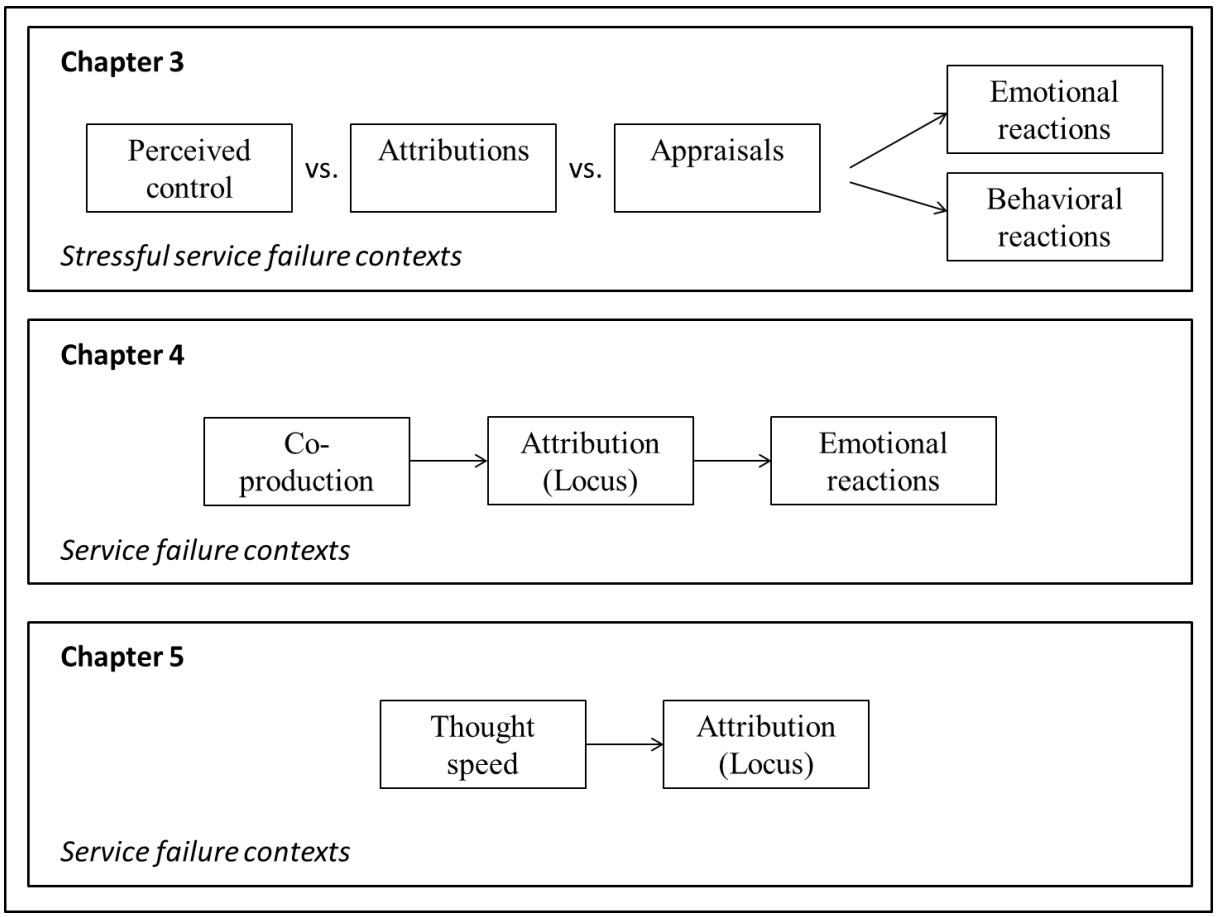
In chapter 5, “Thought Speed and Causal Locus Attribution”, the potential effect of thought speed on causal locus attribution after service failures is examined. Sometimes people may feel that their thoughts are moving faster (or slower) than usual. This suggests that people experience differences in thought speed (Pronin, Jacobs, & Wegner, 2008). Research has shown that fast thought speed may induce positive affect and self-esteem (Pronin et al., 2008; Pronin & Jacobs, 2008; Pronin & Wegner, 2006). A literature review shows that fast thought speed could be either positively or negatively related to external causal attributions. In fact, since the effects of thought speed may be short-lived (Pronin, 2013), it is also possible that thought speed may have no effect on causal locus attribution at all. Four experiments were conducted to test such potential effect.

The novel aspect of this chapter is combining thought speed to investigations about causal locus attribution. No other research about such potential effect of thought speed was found in the literature. The relevance rests on the fact that thought speed can be influenced by external stimuli like Pronin and colleagues did in many experimental studies (e.g., Chandler & Pronin, 2012; Pronin et al., 2008; Pronin & Wegner, 2006). Therefore, discovering whether thought speed may influence causal locus attributions has managerial implications: if there is such effect, service providers could use external stimuli to speed up or slow down thoughts to influence causal attributions. There are also theoretical implications: understanding how thought speed may affect customer reactions to service failure. Since the effect of thought speed might be short-lived (Pronin, 2013), this investigation also allows to check whether the

influence of external stimuli on thought speed lasts after a disturbance –something that has not been investigated.

Figure 2 illustrates what chapters 3, 4, and 5 have in common: they all investigate causal attributions under service failure contexts. It also clarifies the differences among the empirical chapters.

Figure 2 – Theoretical framework of chapters 3, 4, and 5.



Chapter 6, “Conclusions”, brings final comments about each chapter and the dissertation as a whole.

3 THE ROLE OF PERCEIVED CONTROL, CAUSAL ATTRIBUTIONS, AND APPRAISALS IN STRESSFUL SERVICE FAILURES

When people face an undesired outcome, their cognitive reactions like thinking about who is the one to blame for such outcome and whether they could have prevented it affect their emotional and behavioral reactions (Frazier et al., 2011; Weiner, 2000). The purpose of this chapter is to compare three different cognitive models and their power to explain emotional and behavioral reactions after a stressful service failure. The three models are: causal attribution model, from attribution theory (Weiner, 1985), appraisal model, from emotion theory (Lazarus, 1991b), and the temporal model of perceived control (Frazier et al., 2011, 2012).

Attribution theory has been used to explain emotional and behavioral response after consumption episodes, specially failure episodes (Folkes, 1984; Weiner, 2000). According to this theory, causal attributions affect emotions and expectancies which, in turn, are presumed to guide motivated behavior (Weiner, 1985). Attribution theory is not the only approach to link the structure of thinking to emotional and behavioral reactions. Lazarus and colleagues' emotion theory relates appraisals about a stressful event to the experience of certain emotions and the consequent engagement in coping strategies. The coping strategy is not the end of the process for the authors, as coping may lead to reappraisals and change emotions (Folkman & Lazarus, 1988; Lazarus, 1991a). Both attribution and emotion theory show a cognition-emotion-behavior path. The same type of path has been confirmed in studies involving perceived control in consumer behavior literature, showing that customer perceived control leads to more pleasurable purchase and service experiences and, consequently, to approach behavior (Hui & Bateson, 1991; Rompay et al., 2008).

Attribution, appraisal, and perceived control are three different cognitive reactions that impact emotional and behavioral reactions. This research tests these different cognitive reactions and compares their power to predict customer response after a stressful service episode. The purpose is to check whether the temporal model of perceived control developed by Frazier et al. (2011, 2012) – which has not been used in the context of service failures and consumer behavior – could have explanatory power over and above the more traditional models of attributions and appraisals. Stressful service failures were chosen as the context of the investigation because the temporal model was developed to understand people's reactions to stressful life events such as relationship conflicts, bereavement, final exams, etc. Besides comparing these three models, further studies are conducted to test causal effects of past control

(i.e., a part of the temporal model) on customer reactions. The purpose of these different studies is to investigate the potential contribution of the temporal model of perceived control to understand customer reactions after stressful service experiences.

The proposed investigation has theoretical and managerial relevance. From a theoretical perspective, it tests an approach that has not been used so far to explain customer emotion and behavior reactions (i.e., the temporal model of perceived control) and compares its explanatory power to other models that have been traditionally used in the context of customer behavior. The results that emerge from the examination of such novel model may signal other researchers whether it is worth using it in future investigations about customer reactions to failures. From a managerial perspective, it may be easier for service providers to influence customer perceived control than customers' attributions and appraisals. For instance, perceived control may be influenced by co-production, choice, and information (Chan, Yim, & Lam, 2010; Pacheco, Lunardo, & dos Santos, 2013; Skinner, 1996), factors that a firm can manage. But attributions and appraisals may be more associated with individuals' cognitive style (see Peterson et al., 1982 for a measure of individuals' attributional style) than with external factors that a firm can manage. In this sense, it is managerially relevant to understand whether the temporal model of perceived control may influence customer emotional and behavioral reactions.

Since attribution theory has already been discussed in the introductory chapter, the next section explains appraisals from the emotion theory. By understanding the most traditional attribution and appraisal models first, it will be easier to provide explanations of the temporal model of perceived control and compare these three models.

3.1 EMOTION THEORY – THE ROLE OF APPRAISALS

"Cognitive appraisal is a process through which the person evaluates whether a particular encounter with the environment is relevant to his or her well-being, and if so, in what ways" (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986, p. 992). Much of the seminal studies about appraisals were developed along with stress, coping, and emotional theory (e.g., Folkman, Lazarus, Dunkel-Schetter, et al., 1986; Folkman, Lazarus, Gruen, & Delongis, 1986; Folkman & Lazarus, 1988), showing how appraisals may affect emotions and the use of coping strategies. Thus, cognitive appraisals serve to understand customer emotional and behavioral reactions (Watson & Spence, 2007), especially in face of an undesired outcome.

Lazarus (1991a) explains the difference between knowledge and appraisal. According to him, knowledge is “what a person believes about the way the world works in general and in a specific context”, while appraisal is “an evaluation of the significance of knowledge about what is happening for our personal well-being” (Lazarus, 1991a, p. 354). He stresses this difference and alerts that only what we judge relevant to our goals and well-being generates emotions, so, appraisal rather than mere knowledge is the responsible for triggering emotions. He states that attribution theory is mainly based on knowledge while appraisals are implicit, which limits its ability to explain and predict cultural and individual differences when it comes to the consequences of attribution (knowledge). An attribution or knowledge about causation may be relevant and meaningful for one person’s well-being, but not for another’s, which may engender certain emotions in the first case that will not be experienced in the second.

Such notion that appraisals are better emotion predictors than attributions was tested by Smith et al. (1993), who demonstrated that happiness, hope, anger, guilt, fear, and sadness were more related to appraisals than to attributions. In fact, these authors provided evidence that appraisal mediates the relationship between attribution and emotional response. The authors argue that besides the knowledge about causation that comes from attributions, appraisals such as whether a person cares about what is happening, whether it is something good or bad for him/her, whether a person can do something about it, and whether a person can accept it are necessary to generate emotions.

There is no consensus about the number, name or categories of appraisals (Watson & Spence, 2007), so we chose to work with names and categories also used by Lazarus and colleagues. Thus, appraisals can be divided into two categories: primary and secondary appraisals. Primary appraisal is an evaluation of whether someone has anything at stake in a situation, while secondary appraisal is an evaluation of whether there is something to do to overcome or prevent such situation (Folkman, Lazarus, Gruen, et al., 1986). Lazarus (1991b) explains there are three primary appraisals: goal relevance, goal congruence or incongruence, and goal content. Goal relevance refers to whether there is anything at stake. Goal congruence or incongruence refers to whether the situation is appraised as harmful or beneficial. Goal content (or type of ego-involvement) refers to the kind of goal at stake (e.g., preservation or enhancement of one's ego identity or a moral value).

There are also three secondary appraisals: blame or credit (directed at oneself or another), coping potential, and future expectations. There are some considerations to be made about blame or credit: whether there is someone that should be responsible for the harm, threat, or benefit, whether this person had control over the damage or benefit, and whether this blame

or credit is directed to oneself or to another person. Coping potential refers to the possibility of influencing the person-environment relationship for the better. Future expectations refer to expectations about things working out better or worse in the future (Lazarus, 1991b).

Smith et al. (1993) used a slightly different model for primary and secondary appraisal when compared to the one described by Lazarus (1991b), but it keeps quite the same idea of Lazarus and colleagues' previous works (e.g., Folkman, Lazarus, Dunkel-Schetter, et al., 1986; Folkman, Lazarus, Gruen, et al., 1986; Smith & Lazarus, 1993). The model used by Smith et al. (1993) has two primary appraisals and four secondary appraisals. The primary appraisals are motivational relevance, which refers to the importance for one's goals – the same as goal relevance described by Lazarus (1991b) – and motivational congruence, which refers to consistency or inconsistency regarding one's goals – the same as goal congruence.

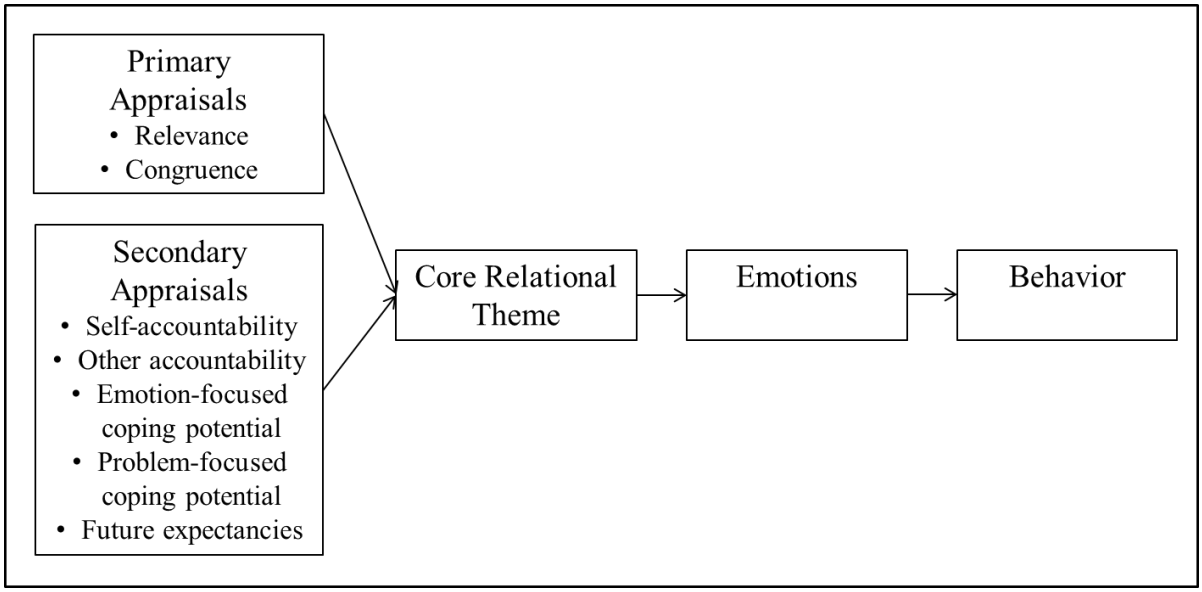
The secondary appraisals considered by Smith et al. (1993) are accountability, problem-focused coping potential, emotion-focused coping potential, and future expectancy. Accountability refers to who or what should receive credit or blame. Accountability differs from causal locus since the former necessarily involves attribution of responsibility and the latter does not. But although Smith et al. (1993) highlight this difference between accountability and causal locus, there are some studies where either causal locus (e.g., Dabholkar & Spaid, 2012; Hui & Toffoli, 2002) or causal controllability (e.g., Russell, 1982) is measured by asking the extent to which someone is responsible for the situation. Some studies also mention responsibility attribution (e.g., Au, Hui, & Leung, 2001; Pittman & Pittman, 1980), which seems to incorporate both causal locus and controllability (Tsiros, Mittal, & Ross, 2004). This suggests that the extent to which attributions encompass responsibility is not completely clear.

According to Smith et al. (1993), problem-focused coping potential refers to the ability of acting directly on the situation to make it better, while emotion-focused coping potential refers to psychological adjustment (i.e., to alter interpretations to feel better about the situation). Future expectancies refer to future actual or psychological changes that can make things better or worse.

As stated by Smith et al. (1993) and Smith and Lazarus (1993), the combination of appraisal components form core relational themes that produce different emotions. Guilt is a result of self-blame (i.e., a core relational theme), which is appraised as motivationally relevant, motivationally incongruent, and self-accountability. Anger is a result of other-blame, appraised as motivationally relevant, motivationally incongruent, and other-accountability. Fear is produced by danger or threat, it is motivationally relevant, motivationally incongruent, and low or uncertain emotion-focused coping potential.

Smith et al. (1993) explain that their study tests attributions and appraisals of a group of emotions from which only anger and guilt have been explicitly modeled by Weiner and colleagues in terms of causal attributions. The authors explain, then, that their study was not a comparison between the model they presented and Weiner and colleagues' model, but rather a general examination of attributions and appraisals. Attributions and appraisals are interrelated. They are different cognitive processes, but one does not rule out the other, since attributions are one step for making appraisals (Lazarus, 1991a; Smith et al., 1993). Figure 3 illustrates the influence of appraisals on emotions, keeping a cognition-emotion-behavior path similar to attribution theory.

Figure 3 – Appraisal model



3.2 TEMPORAL MODEL OF PERCEIVED CONTROL

Perceived control may be defined as the belief one can determine one's own internal state, behavior, environment, and achieve desired outcomes (Wallston, Wallston, Smith, & Dobbins, 1987). According to Skinner (1996), the most fundamental distinction found in control literature is the one between perceived and actual control. Actual control refers to objective control conditions present in a situation while perceived control is a person's belief about the amount of control available. Perceived control is subjective, so a person may believe that s/he has more or less control than s/he actually has.

Perceived control, instead of actual control, seems to determine people's responses (Burger, 1989), affecting emotions and behaviors regardless of actual control conditions (Skinner, 1996). Geer, Davison, and Gatchel (1970) found evidence that perceived control affects people's reactions to aversive stimuli (i.e., shocks) in a positive way even in the absence of actual control. Perceived control has been associated with positive consequences for people's life such as weaker decline in health (Gerstorf, Röcke, & Lachman, 2010), and less psychological distress in cancer patients (Bárez, Blasco, Fernández-Castro, & Viladrich, 2009). Nevertheless, perceived control has also been related to negative consequences such as decrease in life satisfaction when associated with low actual control (Heidemeier & Göritz, 2013), and greater concern about self-presentation and anxiety (Burger, 1989).

Frazier, Berman, and Steward (2001) and Frazier et al. (2011, 2012) analyzed perceived control in posttraumatic stress disorder (PTSD) contexts and stressful events not related to PTSD. The authors developed a temporal model which divides perceived control in past, present, and future control. Past control was illustrated with the question "could I have prevented this?" Present control with the question "what can I do now?" Future control with the question "can I keep this from happening again?"

Even though Frazier and colleagues' temporal model is newer than other models and typologies largely used in control literature, such as Averill's (1973) behavioral, cognitive, and decisional control, Rothbaum, Weisz, and Snyder's (1982) primary and secondary control, Rotter's (1966) internal and external locus of control, and so on, this temporal model has been cited and used in other studies (Frazier, 2003; Frazier et al., 2011, 2012; Sirois, Davis, & Morgan, 2006; Walsh & Bruce, 2011). Also, this model is grounded in the temporal aspect of perceived control, which is not a brand new aspect. Wallston et al. (1987) have argued that studies should consider the perceived control temporal dimension. Skinner (1996) and Thompson (1981) also identify the perceived control temporal dimension in control literature when they cite retrospective (past related) and prospective control (future related).

Frazier et al. (2001) analyzed studies that fit the perceived control temporal dimension. Past control was positively related to distress in some of these studies, but unrelated in others. Present control was associated with better adjustment and fewer PTSD symptoms. Future control was also associated with better adjustment, but this result was inconsistent across the studies and may depend on objective controllability. The authors explain that thinking an event is controllable by you when in fact it is not, may make you feel worse about it. Another explanation for the inconsistency in the results regarding future control may be the perceived

future likelihood of the recurrence of an event, as Frazier et al. (2012) found evidence that the latter could be a better distress predictor than future control itself.

In their empirical study, Frazier et al. (2011) found evidence confirming most of what Frazier et al. (2001) have found in other studies. Results showed present control was associated with lower distress levels. In the context of objective uncontrollable events (e.g., death of a family member), past and future control were associated with higher distress levels. Nonetheless, in the context of objective controllable and inevitable events (e.g., final exam), future control was associated with positive results (i.e., higher grades), what reinforces the suggestion that future control consequences may depend on objective controllability of an event.

Results from Sirois et al. (2006) converge with results described by Frazier et al. (2011, 2001). The former authors investigated the perceived control impact on psychological well-being of people with tinnitus (i.e., people who hear sounds in the absence of external stimuli). They found evidence of a negative relationship between past control and psychological well-being and a positive relationship between present control and psychological well-being.

Future control consequences are showed in results from Houston's (1972) study, which was not analyzed by Frazier et al. (2001). In Houston's (1972) study, perceived control was manipulated by informing a group of participants they could avoid shocks by not making mistakes on a task while telling the other group there was no way they could avoid shocks during the same task. This is similar to Frazier and colleagues' definition of future control. Participants who could not avoid the shocks' occurrence reported higher anxiety levels, but less psychological arousal (measured through heart beats) than participants who could avoid the shocks.

3.3 TEMPORAL MODEL OF PERCEIVED CONTROL VERSUS ATTRIBUTION MODEL

In order to compare the temporal model of perceived control with the attribution model and its explanatory power, it is important to highlight differences and similarities between the two models. As already stated in the introduction chapter, attribution theory refers to the attributed cause of an event, state, or result, focusing on three causality properties: causal locus, causal stability, and causal controllability (Weiner, 2000, 2010). Causal locus refers to the cause being located inside or outside the agent, causal stability refers to the cause being considered

stable or unstable, while causal controllability refers to the cause being volitional or not (Folkes, 1984; Weiner, 2000, 2010). These causal properties affect customers' emotional and behavioral reactions (Weiner, 2000, 2010).

Attribution theory holds a temporal dimension since attributions are made regarding something that has already happened, which means they are related to past events. Such causal attributions are referred to as retrospective control by Thompson (1981). Also, causal stability refers to a future expectation, in other words, it refers to an expectation about the probability of an event happening again. Attribution theory's researchers argue that interpretations of what happened in the past will determine what will be done in the future (Folkes, 1984, Weiner, 2010). Even so, attribution theory does not have the same temporal structure as the one from Frazier and colleagues' model. Attribution theory does not consider actual emotions derived from a stressful event (present control) and even though it includes cognitions about past and future, it does this in a different way than is done in Frazier and colleagues' temporal model.

While attribution theory approaches causal locus, considering who was the responsible for a failure, the temporal model does not question who caused the stressful event. The temporal model through its past control concept measures the perceived possibility of having prevented the stressful event occurrence. In other words, attribution theory asks "Who caused x?" While the temporal model asks "Could I have prevented x?"

Besides, the temporal model does not consider the causal stability and causal controllability properties as the attribution theory does, but it considers a person's control perceptions over stressful events, his/her current emotions, and perceived future likelihood.

3.4 TEMPORAL MODEL OF PERCEIVED CONTROL VERSUS APPRAISAL MODEL

There are also some similarities and differences between the temporal model of perceived control and the appraisal model from Emotion Theory. For instance, appraisals also account for a temporal perspective. Self- and other-accountability appraisals refer to the past as they represent a judgment about who was responsible for an event or outcome that has already happened. Problem- and emotion-focused coping potential appraisals may refer to the present since they are personal evaluations about one's current ability to cope by either acting upon the problem or changing one's own cognitions to feel better. Future expectancies appraisals refer to the future while motivational relevance and motivational congruence could refer to past,

present, or future, depending whether the situation has already impacted, is currently impacting, or is expected to impact personal goals.

Appraisals' temporal perspective is different from the one of perceived control though. The questions posed by appraisals and perceived control are not the same. Past control does not ask who is the responsible for an event, as accountability does, but rather if oneself could have prevented it. Present control does not ask whether one is able to change interpretations, desires, or beliefs about a situation to feel better, as emotion-focused coping potential does, but rather whether one can control one´s current emotions and thoughts about a situation. Although both definitions look quite similar, there has been no significant correlation between these two variables in the studies conducted to compare these models (studies that will be presented later in this chapter). Neither future control nor future likelihood addresses future changes that can make the situation more or less consistent with one's goals as future expectancies do. Instead, future control measures if one perceives oneself able to prevent the situation from happening again while future likelihood measures if the situation is (un)likely to reoccur.

Causal locus attribution and accountability appraisals seem to dichotomize causal locus and responsibility: the blame is either on oneself or on another person/thing. This either/or approach can be expanded by using the temporal model of perceived control. Imagine that people can report high past control even when they think the company is the one to blame (e.g., "the company was wrong on doing that, but I could have prevented the terrible outcome if I had done this"). This makes the temporal model of perceived control a handy resource to analyze stressful situations differently than attributions and appraisals do.

Perhaps one of the best contributions of the temporal model of perceived control as compared with the attribution and appraisal models is to provide the opportunity to investigate the individual's role when he is neither the cause (external causal attribution) nor the responsible (other-accountability appraisal) for a stressful situation. Even in such situations, individuals may ruminate about their control to prevent (either in the past or in the future) an undesirable outcome.

Next section shows how perceived control has been studied in consumer behavior literature.

3.5 PERCEIVED CONTROL IN CONSUMER BEHAVIOR LITERATURE

A great number of studies about perceived control in consumer behavior literature measures perceptions of control over a situation that has already occurred or that is being presented in the form of a scenario (e.g., Hui & Bateson, 1991; Hui & Toffoli, 2002; Rompay et al., 2008). This form of investigating perceived control may be comparable with past control. But most of these studies do not measure perceived control over the occurrence of a stressful event, so, they do not measure past control in the exact same way Frazier et al. (2011, 2012, 2001) did. Even though, analyzing studies about customer perceived control may help to understand the role of perceived control in consumer behavior.

Hui and Bateson (1991) tested perceived control as a mediator of the density-pleasure and choice-pleasure relationships. These authors described a third person service encounter, manipulating the possibility of avoiding a crowded service environment. Participants who reported greater perceived control also reported greater pleasure with the experience and, consequently, showed approach behavior.

Rompay et al. (2008) tested a model similar to the one of Hui and Bateson (1991), with perceived control as a mediator of the relationship between two density types and pleasure. Perceived control over a described situation was measured. Rompay et al.'s (2008) results were similar to those found by Hui and Bateson (1991): positive effect of perceived control on pleasure and positive effect of pleasure on approach behavior.

In Bolkan, Goodboy, and Daly's (2010) study, customers were encouraged to write a complaint letter to an organization. These authors measured perceived control of customers who received a letter in response to their complaints, using as a measure for perceived control the impact those customers perceived to have over the organization. The authors found evidence that perceived control is positively related to satisfaction with the response letter and intention to do business with such organizations in the future.

In Chang's (2008) study, there was also evidence of a positive relationship between perceived control and satisfaction. The author simulated a service failure and gave participants the opportunity to choose among three service recovery options. This author explains that the possibility to choose has increased the sense of control and satisfaction with the service recovery and the service general experience. Pacheco et al. (2013) also found a positive relationship between perceived control and satisfaction when testing a model in which perceived control mediated the co-production and satisfaction relationship.

Dabholkar and Sheng (2009) manipulated situations of download delays in a Web site, measuring perceived control over its use. These authors identified a positive effect of perceived control on attitude towards the Web site and intention to use it. Dellaert and Dabholkar (2009) found a similar effect of perceived control over intention to use mass customization Web sites.

Hui and Toffoli (2002) conducted a survey using the critical incident technique to investigate perceived control over a performed service and its effects on customer causal attributions. These authors showed that customers with higher perceived control level tended to make more internal than external attributions (i.e., attribute more to him or herself the cause of an incident than to the service company) compared to those customers with lower perceived control level.

Among all studies cited in this section, only Hui and Bateson's (1991) study presented the opportunity to avoid the occurrence of a potentially stressful event, following the past control logic from Frazier et al. (2011, 2012, 2001). Hui and Bateson (1991) told participants they could avoid a crowded service environment by leaving it and returning another time for the service encounter. Nevertheless, they did not tell participants they had this opportunity but missed it by not avoiding the crowded service encounter, as it would be the case if the authors had tried to apply the exact past control concept of Frazier and colleagues.

Among the studies cited in this section, the one of Bolkan et al. (2010) was the closest to a present control investigation (i.e., investigation about current emotional reactions derived from a stressful event that have occurred). The complaint letter written by customers may be considered a way of dealing with consequences of a stressful event. The authors, though, measured perceived control over the organization instead of measuring perceived control over current thoughts and emotions derived from the stressful event, moving away from what Frazier et al. (2011, 2012, 2001) consider to be present control. According to these latter authors, present control was the only component of the temporal model that was not associated with control over the occurrence of the stressful event itself, but was associated with the consequences of the event instead.

We did not find any study that taps into the future control from Frazier and colleagues' temporal model. In other words, no study about customer perceived control over future recurrence of a stressful event was found.

Next section discusses the impact of the cognitions we have been addressing so far (i.e., attributions, appraisals, and perceived control) on customer emotional reactions to service failures. The reactions following attributions and appraisals have been already addressed in other studies, but the reactions according to this temporal model of perceived control have not.

3.6 CUSTOMER EMOTIONAL REACTIONS

There are different concepts associated with individuals' emotional reactions, such as affect, mood, feelings, sentiments, and emotions. The literature is inconsistent in terms of definitions for these concepts and precise boundaries among them (Bagozzi, Gopinath, & Nyer, 1999; Wiles & Cornwell, 1991). Sometimes feelings and emotions are even used as synonyms (Wiles & Cornwell, 1991)

Emotions may be seen as an affective reaction to a specific cause (e.g., a person or situation) (Pieters & Van Raaij, 1988), but there is no consensus about a precise definition of emotions (Frijda, 1988). Due to this difficulty to define emotions, some authors seek to explain their main features (Richins, 1997). According to Clore, Ortony, and Foss (1987) and Ortony, Clore, and Foss (1987), emotions refer to internal mental conditions (as opposed to external nonmental/physical conditions), predominantly focused on affect (as opposed to cognition and behavior). Emotions arise from thoughts/attributions (Weiner, 2010) or cognitive appraisals of events and often result in actions (behavioral reactions) to affirm or cope with them (Bagozzi et al., 1999).

Feelings are conceptually similar to emotions, but less intense (Aaker, Stayman, & Vézina, 1988). From a list of 31 feelings that could be elicited by advertising presented by Aaker et al. (1988), some of them are the same words referred to by other authors as emotions. For instance, Aaker et al. (1988) mention "fear" and "anxious" as feelings, while "fear" and "anxiety" are mentioned by Richins (2013) as emotions. Likewise, "irritated" is a feeling mentioned by Aaker et al. (1988) and also one of the items used by Richins (1997) to measure the emotion of anger.

Another word related to feelings and emotions is the word sentiments. According to Frijda, Mesquita, Sonnemans, and Van Goozen (1991), the structures of emotions and sentiments are very similar, that is the reason why some terms are used by both – and probably this is also the case for emotions and feelings. The authors explain that it is difficult to define the duration of emotions. It could last hours, days or even months (with interruptions). But, it has a duration component that is not so present in the case of sentiments. Sentiments are relatively more enduring, they are emotional dispositions (Frijda et al., 1991). In a study measuring emotions and sentiments before and after a stimulus, Prado, Souza, Ribeiro, and Santos (2007) found more variation in emotions, corroborating the notion that sentiments are less intense and last longer than emotions.

Mood is also related to emotions. As in the case of sentiments, mood is also considered to be less intense and lasts longer than emotions (Bagozzi et al., 1999; Pieters & Van Raaij, 1988; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008). Contrary to emotions and sentiments, which are responses to a specific object (e.g., person or situation), mood is a relatively continuous state without a specified object (Frijda et al., 1991).

Another concept related to emotion is affect. Affect is a generic term functioning as an umbrella for more specific terms such as emotions and mood, among others (Bagozzi et al., 1999; Pieters & Van Raaij, 1988; Wiles & Cornwell, 1991; Zeelenberg et al., 2008). The main feature of affect is valence (positive vs. negative) (Watson, Clark, & Tellegen, 1988; Zeelenberg et al., 2008). Emotions are affective phenomena because they can be categorized into positive or negative (Zeelenberg et al., 2008). Positive affect refers to the extent to which one feels enthusiastic while negative affect refers to a variety of aversive mood states such as anger, guilt, fear, etc. (Watson et al., 1988). One of the items used by Watson et al. (1988) to measure negative affect is the word "irritable", which is similar to the word "irritated" mentioned by Aaker et al. (1988) as a feeling and used by Richins (1997) to measure the emotion of anger. This shows how difficult it is to distinguish and measure these different concepts when conducting empirical studies.

This chapter accounts for specific customer affective reactions following service failure. In other words, the present investigation refers to negative emotional reactions from customers in face of service failures. Emotions influence individuals' actions and are crucial for decision making (Bagozzi et al., 1999; Zeelenberg et al., 2008), that is why they are so important for customer behavior and service management studies.

When customers face service failures, negative emotions (rather than positive emotions) are prone to be evoked. Negative emotions usually are experienced when a person's current state is worse than initially expected (Zeelenberg, Van Dijk, Manstead, & van der Pligt, 2000). Such emotions are usually affected by causal attributions (Weiner, 2010) and appraisals (Smith et al., 1993) made by individuals. But it was already mentioned that perceived control may affect people's emotional reactions as well (Hui & Bateson, 1991; Rompay et al., 2008).

From a plethora of negative emotions that customers may experience, this literature review will focus on two: regret and anger (although other emotions such as disappointment, guilt, and fear will be part of the empirical studies as well). The reason for focusing on only two emotions during the literature review is to provide the readers with a glance about how the temporal model of perceived control may affect customers' emotions. But the "how" is not the focus of this chapter. The purpose of this article is to check "if" the model affects customers'

emotions, comparing the magnitude of its effects with the effects of attributions and appraisals – which will be done in studies 1A, 1B, and 1C – and check whether the model of perceived control may be combined with attributions to investigate service failures – which will be done in study 2.

Regret and anger were chosen over guilt, disappointment, and fear to be part of this section for three reasons: First, because of the relevance of these emotions. Regret is the negative emotion most frequently experienced (Saffrey, Summerville, & Roese, 2008; Shimanoff, 1984). Besides, regret (together with disappointment) is the emotion most closely related to decision making (i.e., prototypical decision-related emotion) (Martinez, Zeelenberg, & Rijsman, 2011; Van Dijk & Zeelenberg, 2002). Anger, in turn, is deemed to be the dominant emotional reaction following service dissatisfaction, better predicting post-purchase behavior than any other negative affective state (Kalamas, Laroche, & Makdessian, 2008). Second, because these two emotions appear to be the most likely emotional consequences from the temporal model of perceived control we want to test. The potential link between this model and these two emotions will be explored in this section. Third, because one of them is more self-focused (regret) while the other is more other-focused (anger). This enables to cover a broader aspect of how the model may affect emotional reactions compared to using only self-focused or other-focused emotions.

Regret is a self-blame emotion derived from the comparison of a current situation to one that would have been better had the agent decided differently in the past (Zeelenberg & Pieters, 2007). This comparison of a current situation with what might have been is known as counterfactual thinking (Zeelenberg et al., 1998). Anger is an other-focused emotion represented by a strong feeling of displeasure, hostility, and desire to attack the source of anger (Bonifield & Cole, 2007), often associated with aggressiveness (Averill, 1983).

Weiner (2010) associates guilt and regret with internal controllable attributions while Smith et al. (1993) associates guilt to motivationally relevant, motivationally incongruent, and self-accountability appraisals. Even though Smith and colleagues do not explain which would be the appraisal patterns for regret, we may infer that it would be the same patters mentioned for guilt. We may infer such thing because both emotions imply self-blame (Smith et al., 1993; Zeelenberg & Pieters, 2007), being very similar to each other except for the fact that guilt is predominantly experienced in situations of interpersonal harm (negative outcomes for others), while regret is experienced in both interpersonal and intrapersonal harm (negative outcomes for the self) situations (Zeelenberg & Breugelmans, 2008). Since we are concerned with negative

outcomes for the self (i.e., service failures), we keep focused on influences on regret rather than guilt.

Considering that regret is associated with an internal controllable cause for a failure (Weiner, 2010), self-accountability (Smith et al., 1993), and is experienced when a person thinks his/her situation would be better if he/she had taken different decisions in the past (Zeelenberg & Pieters, 2007), it is logical to infer that the more a person thinks he/she could have prevented a stressful consumption experience from happening (high past control), the more regret this person will experience. So, customers who perceived they could have prevented a service failure tend to experience regret.

While regret is associated with internal controllable attributions, anger is associated with external controllable attributions (Bougie et al., 2003; Folkes, 1984; Weiner, 2000). Besides being associated with a situation controllable by others, anger is positively related to customers' belief that the firm tried to maximize its own interests and took advantage of the customer (Joireman et al., 2013). So, a customer who perceives a company to have control over a stressful situation should experience anger.

However, customer's own perceived control could have some influence on the extent to which s/he blames the service company. According to the results from Hui and Toffoli (2002), the more customers perceive to have control over a service encounter, the less these customers will be inclined to make company-focused causal attributions. Weiner (1995) argues that responsibility is closely related to control. According to the author, a driver may cause a car accident because he or she had a heart attack (something the driver cannot control). In such case, we may attribute the cause of the accident to the driver but we cannot say he/she is responsible for the accident since he or she had no control over it. Caouette, Wohl, and Peetz (2012) consider this close relationship between responsibility and control by stating that the higher the control a person perceives to have over his or her actions, the more responsible he or she feels. These authors also found evidence supporting this control-responsibility relationship.

Based on Caouette et al.'s (2012) study, customer perceived past control over stressful service failures should lead to perceived personal responsibility over it and, according to Hui and Toffoli (2002), such control could also attenuate responsibility attributed to the service company. So, customers whose perceived past control over a stressful service is high could attribute less responsibility to the service company, experiencing less anger toward the company.

Since present control refers to control over current impacts from a stressful event that has already happened (Frazier et al., 2011, 2001), present control could be negatively related to

negative emotions derived from a stressful service failure. Therefore, the higher a customer's perceived present control, the less intense the negative emotions experienced by this customer should be. A similar negative relationship between present control and distress was reported by Frazier et al. (2011, 2001).

Concerning perceived future control, it has not been proven to affect people's emotion reactions directly, but rather to affect future likelihood, which in turn would affect emotional reactions (Frazier et al., 2012). Perceived future control is negatively related to perceived future likelihood of an event recurrence, which in turn is positively related to distress (Frazier et al., 2012). It means that the more a person perceives he or she can prevent an event from happening again, the smaller should be the perceived future likelihood of its recurrence. And the more likely the recurrence of a stressful event, the more distress a person should experience. The same relationship may be expected in stressful service contexts.

3.7 CUSTOMER BEHAVIORAL REACTIONS

Both experienced and anticipated emotions – future emotions that one expects to experience – may influence customer behavior (Zeelenberg et al., 2000). The investigations conducted in this chapter focus on experienced emotions as they refer to emotional reactions to a stressful service episode that already happened.

The experience of regret and anger may lead to a variety of customer behavioral reactions. Regret may lead to switch behavior (Cho & Song, 2012; Zeelenberg & Pieters, 1999). Anger may lead to desire for revenge, complaint and negative word-of-mouth behaviors (Bougie et al., 2003; Grégoire et al., 2010; Joireman et al., 2013; Weiner, 2000).

Although customer behavioral reactions are very important to service marketing and consumer behavior literature, no hypotheses regarding such reactions were formulated. This is because the impact of emotions such as regret and anger on behavioral reactions have been widely investigated in previous studies (e.g., Bougie et al., 2003; Cho & Song, 2012; Grégoire et al., 2010; Zeelenberg & Pieters, 1999, 2004). But besides investigating the influence of the three cognitive models (perceived control, attributions, and appraisals) on emotions, the studies in this chapter also check for potential direct influences of the cognitive models on customer behavioral reactions. Next sections explore the studies conducted to investigate the impact of

the temporal model of perceived control on emotional and behavioral reactions as well as to compare this model with the traditionally used attribution and appraisal models.

3.8 STUDY 1

Study 1 investigates whether the temporal model of perceived control is relevant for stressful service encounters by investigating the explanatory power of attributions, appraisals, and perceived control for customer emotional and behavioral responses. Study 1 is divided into studies 1A, 1B, and 1C. There are few differences among these studies regarding sample and measures.

3.8.1 Study 1A: Procedure

A survey was conducted with participants from an online panel of the Ghent University, who were asked to remember and describe a stressful service episode they had experienced. Total sample size was 62 (87% women, M_{age}=29.86, SD_{age}=12.39) after deleting respondents that showed at least one of the following characteristics:

- Incorrect answer for the attention question (1 respondent). In this attention question, participants were told to choose option number 2;
- Described situations unrelated to service failure (1 respondent);
- Described situations that were not stressful (19 respondents). Stress was measured with a 7-point scale (1 = not at all to 7 = very strongly) in which 4 was the neutral point. All the situations rated below 5 were considered to be not stressful and were deleted.[1]

[1] The reason for using only stressful situations (i.e., situations rated as 5, 6, or 7 in the stress scale) is because the temporal model of perceived control was specifically developed to understand individuals' response to these situations. One could use only situations rated as 7 in the stress scale, which would represent extreme stressful situations. We chose to use situations equal or above 5 because we wanted to keep the context of stressful situations without the necessity of working only with extreme stress. Frazier and colleagues do not restrict the use of their scale to extreme stress.

After the service failure description, participants filled out several scales intended to measure the temporal model of perceived control, attributions, appraisals, and emotional and behavioral reactions. These scales are presented in table 1, in the same order they were asked in the questionnaire.

Table 1 – Measures from study 1A

Name of the variable, Cronbach alpha or correlation, source	**Item(s)**
Regret, α=.73, Yi and Baumgartner (2004)	1) Regretful 2) Should have known better 3) Should have made a different choice
Anger, α=.84, Yi and Baumgartner (2004)	1) Angry 2) Mad 3) Furious
Guilt	1) Guilty
Fear	1) Fearful
Actual complaining behavior	1) I have complained to the company
Complaining intention, Zeithaml, Berry, and Parasuraman (1996)	1) It is likely that I will complaint to the company's employees if I experience another problem with the company's services in the future
Actual switch behavior	1) I switched to another service provider after the event
Switch intention, Zeithaml et al. (1996)	1) I will do less business with this company in the next few years
Actual negative word-of-mouth (NWOM) behavior, α=.82, Joireman et al. (2013)	1) I spread negative word-of-mouth about the firm 2) I denigrated the firm to my friends 3) When my friends were looking for a similar product or service, I told them not to buy from this firm
Negative word-of-mouth (NWOM) intention, α=.82, Schoefer and Diamantopoulos (2008)	1) It is likely that I will tell others about the negative service I received 2) It is likely that I will warn friends and relatives not to buy from this company 3) It is likely that I complain to friends and relatives about this company
Desire for revenge, α=.94, Joireman et al. (2013)	Because of this incident… 1) I wanted to punish the firm in some way 2) I wanted to cause inconvenience to the firm 3) I wanted to get even with the service firm 4) I wanted to make the service firm get what it deserved 5) I wanted to make them pay for the poor service
Causal locus attribution, α=.71, Russell (1982)	The cause is something… 1) That reflects an aspect of yourself / That does not reflect an aspect of yourself 2) Inside of you / Outside of you

	3) Something about you / Something about others
Causal stability attribution, α=.61[2], Russell (1982)	The cause is something… 1) Permanent / Temporary. 2) Stable over time / variable over time 3) Unchangeable / Changeable
Causal controllability attribution, α=.20[3], Russell (1982)	The cause is something… 1) Controllable by you or other people / Uncontrollable by you or other people 2) Intended by you or other people / Unintended by you or other people 3) No one is responsible / Someone is responsible
Motivational (Goal) relevance appraisal[4]	1) To what extent does the situation touch your goals and concerns
Motivational (Goal) congruence appraisal, *r*=.69	1) To what extent do you consider the situation consistent with your goals 2) To what extent do you consider the situation something good for your goals
Self-accountability appraisal, Smith et al. (1993)	1) To what extent do you consider yourself responsible for this situation
Other-accountability appraisal, Smith et al. (1993)	1) To what extent do you consider someone else responsible for this situation
Problem-focused coping potential appraisal	1) To what extent do you consider yourself able to act directly upon the situation to make it better
Emotion-focused coping potential appraisal	1) To what extent do you consider yourself able to change interpretations, desires, or beliefs about the situation to feel better
Future expectancies appraisal	1) Indicate your expectancies about future changes that can make the situation more or less consistent with your goals
Past control, α=.80, Frazier et al. (2011)	1) I could have done something to prevent this event from happening 2) There is nothing I could have done to prevent this event from occurring (R) 3) This event happened because of something I did or didn't do 4) I didn't have any control over the event occurring (R)

[2] The Cronbach Alpha increases to .69 by deleting the third item, but we chose to keep all three items for analysis because we do not think that a change from .61 to .69 is big enough to justify the exclusion of one item.

[3] The Cronbach Alpha did not increase by deleting one of the items. Due to the extremely low Cronbach Alpha and the fact that each item seems to measure a different thing (i.e., controllability, intention, and responsibility), only the first item of causal controllability attribution was used in the statistical analysis.

[4] Except for self- and other-accountability appraisals, the items used by Smith et al. (1993) and Smith and Lazarus (1993) to measure appraisals were not disclosed. For this reason, all the appraisals from this study (except for self- and other-accountability appraisals) were created based on Smith and colleagues' definitions of each appraisal and followed the same amount of items used by the authors in their study.

	5) I couldn't have prevented it (R)
Present control, α=.72, Frazier et al. (2011)	1) There isn't much I can do to help myself feel better about the event (R) 2) How I deal with this event now is under my control 3) I don't have much control over my emotional reactions to the event (R) 4) When I am upset about the event, I can find a way to feel better 5) I have control over my day-to-day reactions to this event 6) There isn't much I can do to keep the event from affecting me (R) 7) I have control over how I think about the event 8) My reaction to the event is not under my control (R)
Future control, α=.83, Frazier et al. (2011)	1) I can do things to make sure I will not experience a similar event in the future 2) There is nothing I can do to prevent a similar event from happening again (R) 3) I have no control over whether a similar event happens to me again (R) 4) There are things I can do to reduce the risk that a similar event will happen again
Future likelihood, α=.93, Frazier et al. (2012)	1) I fully expect something similar to happen to me again 2) I will not experience something like this again (R) 3) I'm sure something similar will happen to me again 4) I don't expect something like this to happen to me again (R) 5) I don't believe I will ever experience this sort of thing again (R)

Obs. Scales were translated into Dutch (participant's native language) by specialists (i.e., marketing professor and PhD students) who were native Dutch speakers fluent in English.

Smith et al. (1993) measured appraisals and core relational themes, using both measures in their regression analyses to compare with attributions. They compared attributions vs. appraisals, attributions vs. core relational themes, and attributions vs. appraisals plus core relational themes. According to these authors, appraisals form core relational themes which in turn affect emotions. We chose to measure only appraisals for two reasons: 1) Core relational themes represent the pattern of answer to the appraisal questions (Smith et al., 1993). For instance, the core relational theme of other-blame is measured by items such as "Someone else is to blame for the bad situation I'm in" and is composed by appraisals that refer to other-accountability and are motivationally relevant and incongruent. So, the core relational theme is measured by at least three items, but it represents some appraisals, which are also measured by other items. Thus, it seems redundant to measure both. 2) Appraisals and attributions are more similar to each other than the core relational themes and attributions are. Thus, we chose to use only appraisals (rather than appraisals and core relational themes) in our studies.

3.8.2 Study 1A: Results

The situation that was deleted for being unrelated to a service failure consisted of a question about companies listed on the stock exchange. The service failures described involved banks, bike repair shops, retail stores, hairdressers, health professionals (i.e., dentists and physicians), health insurance companies, telephone companies, internet companies, energy companies, cleaning service, public transport, among others. Some examples of the failures are rude treatment, long waiting time, poor service, and unfulfilled promises.

Multiple regression analyses containing past, present, and future control and future likelihood as independent variables (IVs) were conducted to every possible dependent variable (DV) in this study (i.e., all the emotions and behaviors measured in the study). The same was done with attributions as IVs and with appraisals as IVs. This is also how Smith et al. (1993) compared attributions and appraisals in their study.

Before proceeding to the main results of such analyses, indicators of collinearity were examined. Hair, Anderson, Tatham, and Black (2005) claim that the first indicator of collinearity is the presence of high correlations (r>.90) among the IVs. The highest correlation for the temporal model of perceived control was the one between past and future control (r=.80). The other correlations for this model were below .30. Table 2 shows the correlation matrix for the temporal model of perceived control. Correlations among locus, stability, and controllability attributions were below .20 while correlations among the seven appraisals were below .50.

Table 2 – Correlation matrix: temporal model of perceived control (study 1A)

	Past Control	Present Control	Future Control	Future Likelihood
Past Control	1.00	.16	.80***	-.14
Present Control	.16	1.00	.15	-.01
Future Control	.80***	.15	1.00	-.28*
Future Likelihood	-.14	-.01	-.28*	1.00

* p<.05, ** p<.01, *** p<.001.

Other indicators of collinearity are low tolerance values (.10) and high variance inflation factor values (VIF>10). Tolerance values for past and future control were .36 and .33 respectively, while VIF values were below 3. Tolerance values for future likelihood and present control were above .90 while VIF values were below 2. According to the reference values

suggested by Hair et al. (2005), there is no evidence of collinearity for the IVs of the temporal model of perceived control. Tolerance values for attributions were above .90 while VIF values were below 2. Tolerance values for appraisals were above .50 while VIF values were below 2. Therefore, no evidence of collinearity for attributions and appraisals either.

The correlations between the temporal model of perceived control and (a) the attribution model and (b) the appraisal model are presented in tables 3 and 4 respectively. The highest correlation among components of perceived control and attributions was between past control and causal locus attribution (r=-.45). The highest correlation among components of perceived control and appraisals was between past control and self-accountability (r=.57). The fact that the components of the temporal model of perceived control are not highly correlated with attributions and appraisals reinforces the idea that this model is different from what has already been used in consumer behavior literature.

Table 3 – Correlation matrix: temporal model of perceived control and attribution model (study 1A)

	Past Control	Present Control	Future Control	Future Likelihood
Locus	-.45***	.02	-.30*	.06
Stability	.04	-.11	.02	.01
Controllability	-.07	-.05	.12	-.18

* p<.05, ** p<.01, *** p<.001.

Table 4 – Correlation matrix: temporal model of perceived control and appraisal model (study 1A)

	Past Control	Present Control	Future Control	Future Likelihood
Relevance	-.12	-.02	-.15	.28*
Congruence	.09	-.14	.20	-.14
Self-accountability	.57***	.04	.50***	-.04
Other-accountability	-.30**	-.22	-.27*	-.04
Problem-focused coping potential	.10	-.16	.25	-.27*
Emotion-focused coping potential	.27*	.13	.21	.02
Future expectancies	.15	.12	.14	-.44***

* p<.05, ** p<.01, *** p<.001.

Multiple regression analyses showed that, according to expectations, the temporal model of perceived control was significantly related to the experience of regret (R^2=.33, p<.001)

and anger (R^2=.22, p<.01). Tables 5 and 6 show the regression coefficients for regret and anger as functions of perceived control.

Table 5 – Regret as a function of perceived control (study 1A)

	β	*SE*	*t*	*p*
Past Control	.47	.23	2.61	.012
Present Control	-.02	.22	-.20	.842
Future Control	.14	.22	.74	.461
Future Likelihood	.07	.13	.65	.521

Table 6 – Anger as a function of perceived control (study 1A)

	β	*SE*	*t*	*p*
Past Control	-.34	.19	-1.73	.089
Present Control	-.41	.18	-3.44	.001
Future Control	.38	.18	1.89	.064
Future Likelihood	.11	.11	.90	.373

Table 7 compares the explanatory power of each cognitive model (temporal model of perceived control, attribution model, and appraisal model) in the same way Smith et al. 1993 compared attributions and appraisals. In the first three numerical columns of the table, R^2 was transformed into percentages (i.e., R^2 values were multiplied by 100), representing percentages of each emotion variance explained by the three cognitive models. The last two columns show the extra percentage of emotion variance explained when the components of the temporal model of perceived control are added as additional IVs on the multiple regression analyses containing attributions and appraisals as IVs. It is important to notice that these last two columns show just the extra explanation (i.e., the unique contribution of perceived control) when adding perceived control first to the attributions and then to the appraisals. It was computed as follows: R^2 from regression with both the temporal model of perceived control and attribution (or appraisal) model minus the R^2 from the regression only with attribution (or appraisal) model. The result was multiplied by 100.

When regressing each emotion, we used all the four components from the temporal model of perceived control (i.e., past control, present control, future control, and future likelihood) as independent variables (k=4). Similar, we regressed each emotion on all the three attributions (locus, stability, and controllability, k=3). But when regressing emotions on

appraisals, just the three appraisals related to each emotion were used as independent variables: congruence, relevance, and self-accountability in case of regret and guilt; congruence, relevance, and other-accountability in case of anger; congruence, relevance, and emotion-focused coping potential in case of fear. This was the same procedure adopted by Smith et al. (1993).

Table 7 – Emotions explanation by each of the cognitive models (study 1A)

	% emotion variance explained by each approach (R^2 x 100)			Extra % emotion variance explained from adding:	
Emotion	Perceived control (k=4)	Attributions (k=3)	Appraisals (k=3)	Perceived control to Attributions	Perceived Control to Appraisals
Regret	33***	11	26***	26**	13***
Anger	22**	2	18**	22*	20***
Guilt	13	12	33***	9	3**
Fear	8	20**	12*	6*	8

* p<.05, ** p<.01, *** p<.001.
k corresponds to the number of independent variables used in the multiple regression analyses.

Based on table 7, the temporal model of perceived control may be much better than the attribution model to explain regret and anger. While perceived control explained 33% of regret variance (p<.001), attributions explained 11% of regret variance (p>.05). When adding perceived control to attributions, the explanation of regret more than triples, increasing from 11% to 37%, which means an increase of 236%. This last number is not the one we are interested in. Appraisals explained 26% of regret variance, which was similar in significance (p<.001) to the variance explained by the temporal model. The extra 13% of variance explained obtained by adding the temporal model of perceived control to appraisals represents a 50% increase from the original 26% variance explained by appraisals.

Perceived control explained 22% of anger variance (p<.01) while attributions had a non-significant 2% explanation for this emotion. By adding perceived control to attributions, there is an extra 22% of variance explanation, hitting a total of 24% of anger variance explained (p<.05). Anger variance explanation was similar in significance for the temporal model of perceived control and the appraisal model (p<.01). By adding perceived control to appraisals, there is an extra 20% of variance explanation.

Appraisals explained 33% (p<.001) of guilt variance, explaining it better than perceived control (R^2=.13, p>.05) and attributions (R^2=.12, p>.05). Attributions explained fear (R^2=.20, p<.01) better than perceived control (R^2=.08, p>.05) and appraisals (R^2=.12, p<.05). Figure 4

shows emotion variance explained when regressed on the attribution model and temporal model of perceived control. The overlap of variance explained provided by the graphic allows to check for the unique contribution of perceived control.

Figure 4 – Emotions variance explained by attributions + perceived control (study 1A)

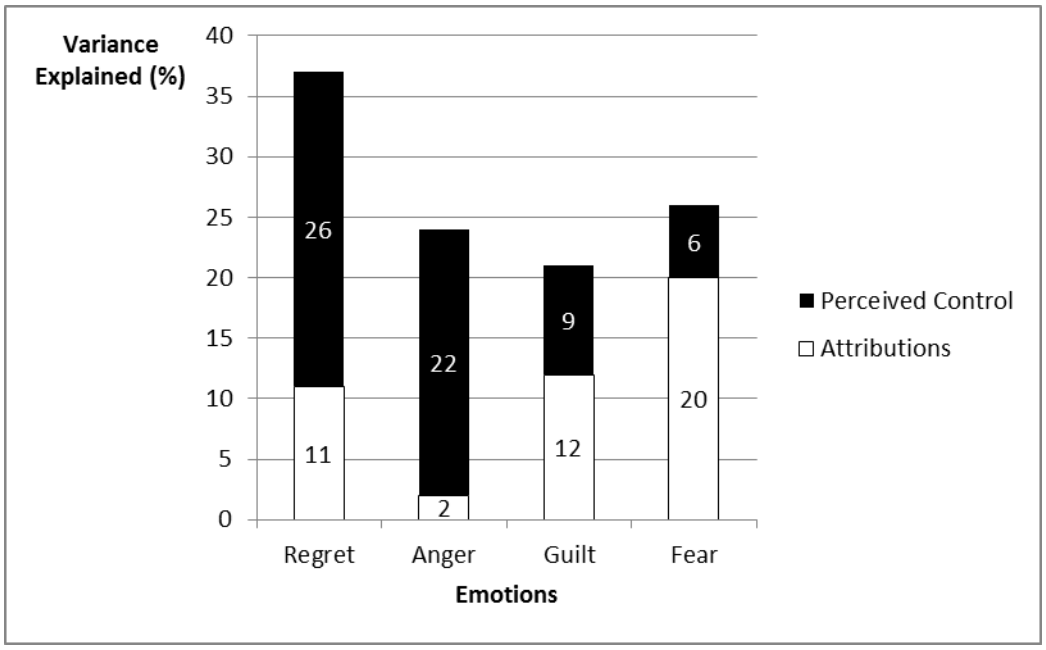
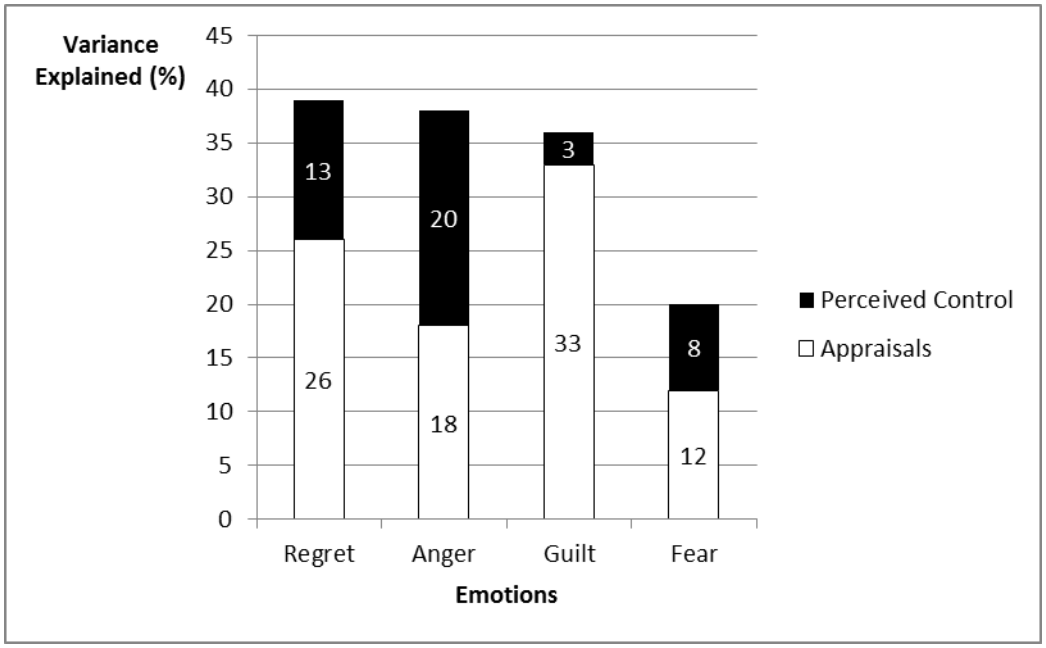


Figure 4 makes it clear that the temporal model of perceived control may be an important tool to understand customers' emotional reaction after a service failure when combined with the well-known causal attribution model. The larger contribution of the temporal model of perceived control seems to refer to regret and anger variance explanation. The same type of graph was made for the appraisal model plus the temporal model of perceived control (see figure 5). The unique contribution of the temporal model of perceived control is smaller when combined with the appraisal model than when associated with the attribution model. Nevertheless, it may still be helpful to understand the variance of different emotions (especially of regret and anger).

Figure 5 – Emotions variance explained by appraisals + perceived control (study 1A)



The same analyses were conducted considering actual and intended behaviors as DVs. Since there was no specific appraisal related to customer behavioral intentions (Smith and colleagues only observed emotion variance explanation), all the seven appraisals were included in regression analyses to investigate how much of the variance in behavior they explain. Table 8 shows percentages of behavior variance explained by each of the cognitive models.

Table 8 – Behaviors explanation by each of the cognitive models (study 1A)

	% emotion variance explained by each approach (R^2 x 100)			Extra % emotion variance explained from adding:	
Behavior	Perceived control (k=4)	Attributions (k=3)	Appraisals (k=7)	Perceived control to Attributions	Perceived Control to Appraisals
Switch (actual)	27**	7	11	23**	23*
Switch (intention)	18*	2	21	18	11*
NWOM (actual)	12	2	25*	13	5*
NWOM (intention)	15*	6	43***	13	3***
Complaint (actual)	4	3	33**	6	3*
Complaint (intention)	6	6	30**	10	5*
Desire for revenge	7	3	25*	7	1

* p<.05, ** p<.01, *** p<.001.
k corresponds to the number of independent variables used in the multiple regression analyses.

We see in table 8 that the attribution model alone had no significant explanatory power for actual and intended behaviors after a stressful service. But the temporal model of perceived

control and the appraisal model had. The temporal model of perceived control could significantly explain the variance of actual switch behavior (R^2=.27), switch intention (R^2=.18), and negative word-of-mouth intention (R^2=.15). Appraisals could significantly explain variances on actual (R^2=.25) and intended negative word-of-mouth (R^2=.43), actual (R^2=.33) and intended complaint (R^2=.30), and desire for revenge (R^2=.25).

Figure 6 shows behaviors variance explained when regressing behavior on the attribution model plus the temporal model of perceived control. Figure 7 shows the same for the appraisal model plus the temporal model of perceived control. We visualize in figures 6 and 7 that the temporal model of perceived control may have an important contribution to explain customer behavior after a stressful service episode, especially when it comes to switch behavior.

Figure 6 – Behaviors variance explained by attributions + perceived control (study 1A)

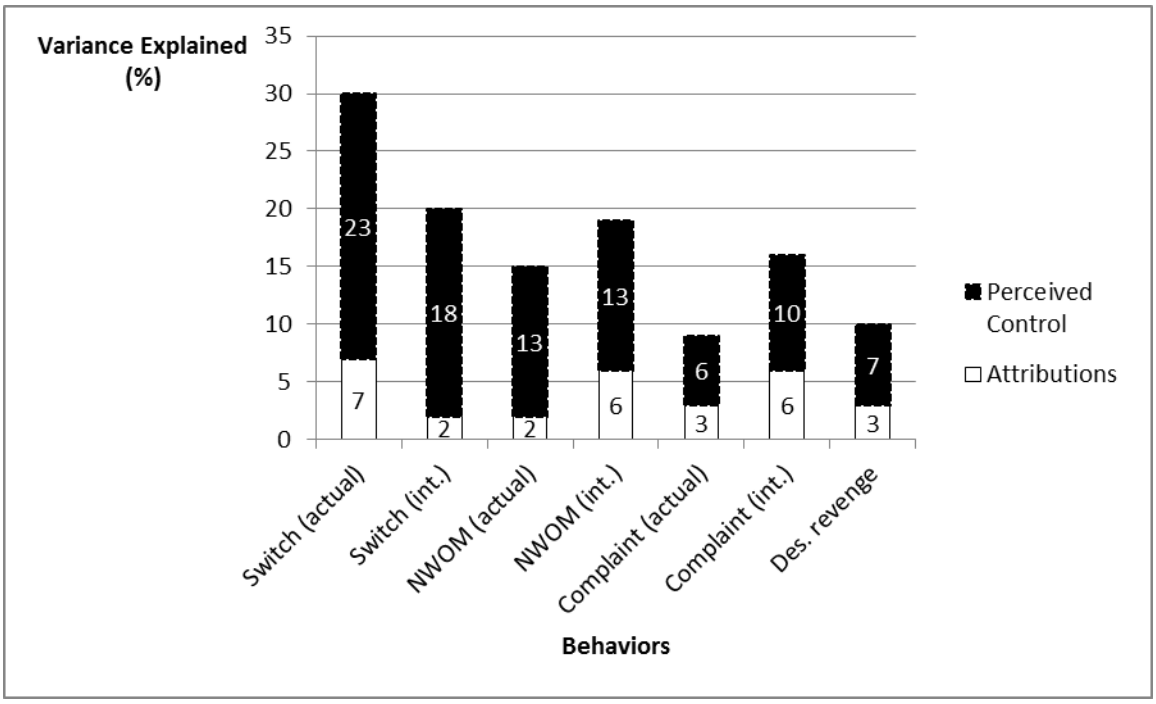
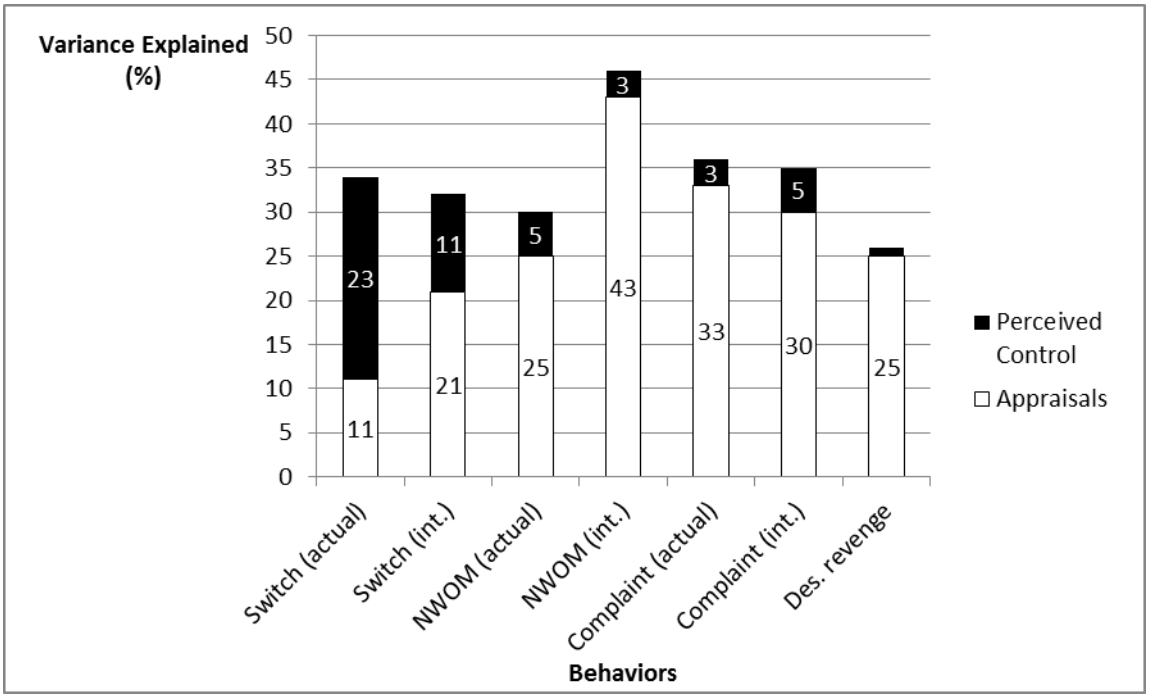


Figure 7 – Behaviors variance explained by appraisals + perceived control (study 1A)



Instead of using the explained variance (R^2) in emotions and behaviors to compare perceived control, attributions, and appraisals, table 9 uses the values of the standardized betas (β) from the multiple regressions to show the share of explanation of each approach. For instance, in the case of regret regressed on the four variables of the temporal model of perceived control (i.e., past control, present control, future control, and future likelihood) plus the three attribution variables (i.e., locus, stability, and controllability), the share of explanation of the attribution model was computed by dividing the sum of the standardized betas of locus, stability, and controllability by the sum of all standardized betas of the regression. The division result was turned into a percentage (i.e., multiplied by 100). All the standardized betas were previously turned into positive numbers (i.e., negative betas were multiplied by -1).

Table 9 – Share of explanation according to the standardized betas (study 1A)

	Attributions + Perceived control		Appraisals + Perceived control	
	Attributions	Perceived control	Appraisals	Perceived control
Regret	25%	75%	46%	54%
Anger	17%	83%	33%	67%
Guilt	46%	54%	60%	40%
Fear	67%	33%	56%	44%
Switch (actual)	22%	78%	34%	66%
Switch (int.)	19%	81%	59%	41%
NWOM (actual)	14%	86%	71%	29%
NWOM (int.)	21%	79%	76%	24%
Complaint (actual)	29%	71%	66%	34%
Complaint (int.)	35%	65%	75%	25%
Desire for revenge	29%	71%	84%	16%

Table 9 shows that when regret is regressed on the temporal model of perceived control and attribution model at the same time, the model of perceived control accounts for 75% of regret variance explained (i.e., 75% of R^2), while the attribution model accounts for only 25%. These data obtained via the standardized betas show that the temporal model of perceived control has superior share of explanation for almost all the emotions and behaviors measured in this study when compared to the attribution model. Fear was the only exception. Attribution share of explanation for fear was 67% of the variance explained.

When it comes to emotions and behaviors regressed on the temporal model of perceived control and appraisal model altogether, perceived control has a higher share of explanation for regret (54%), anger (67%), and actual switch behavior (66%). But it also had an important contribution when explaining guilt, fear, and switch intention (share of explanation over or equal to 40%). The next section discusses the results from study 1A.

3.8.3 Study 1A: Discussion

The results from study 1A suggest that the temporal model of perceived control may be helpful to investigate customers' emotional and behavioral reactions. It performed better than the attribution and appraisal models to explain variances in regret, anger, repurchase, and switch behaviors. It also improved the variance explanation of many variables when added to

attributions and appraisals. These results indicate that the temporal model of perceived control is worthy of further investigation. Although, to the best of our knowledge, it has not been used in studies about customer reactions, it might be able to contribute to investigations about customers' emotional and behavioral reactions to stressful service episodes.

The appraisal model had good explanatory power over emotional and behavioral reactions. It could significantly explain all the emotions and most of the behaviors measured in this study, explaining a larger number of variables than the temporal model and the attribution model. In addition, when combined to the temporal model, the appraisal model had a higher share of variance explanation for eight out of the eleven reactions from this study.

The explanatory power of the attribution model was surprisingly low for the emotions measured in this study. This contradicts previous knowledge about anger being a function of an external controllable cause (Weiner, 2000). Even in the study of Smith et al. (1993), in which attributions had lower explanatory power than appraisals, attributions had significantly explained anger (R^2=.30, p<.001), guilt (R^2=.28, p<.001), and fear (R^2=.23, p<.01) – regret was not assessed. In the present study, the only significant explanatory power of attributions was for fear (R^2=.20, p<.01).

One of the possible reasons for such surprisingly low explanatory power of attributions is the fact that we used only 3 causal attributions while Smith et al. (1993) used 13 causal attributions (locus, stability, controllability, intentionality, globality, mood, physique, personality, ability, effort, difficulty of the task, and luck). This difference in the number of attributions could explain the differences between the results of this study and the results from Smith et al. (1993). But many studies from the service and customer behavior literature uses only the three attributions used in study 1A or even one or two of them (e.g., Dunn & Dahl, 2012; Hess et al., 2003; Van Vaerenbergh, Orsingher, Vermeir, & Larivière, 2014; Wirtz & Mattila, 2004). These three attributions are considered the main causal dimensions or properties (Folkes, 1984; Weiner, 2000).

Another explanation would be that the scale used to measure attributions did not have a good performance in study 1A. Indeed, there were small Cronbach alphas for stability and controllability attributions, which may indicate either a problem with the scale or a problem with the data collected. Regarding a potential problem with the scale, we believe its performance for this particular study was inferior to its performance in other studies. The scale has been widely used by other authors (e.g., Hess et al., 2003, 2007; Smith et al., 1993; Wirtz & Mattila, 2004) and its reliability and validity has been supported by several studies according to Chwalisz, Altmaier, & Russell (1992). Even though the literature indicates it is a good scale,

we will use another scale in our second study to see whether our results are genuine or due to a bad performing scale. Regarding the quality of the data collected, an attention question was included in the questionnaire to check the quality. The only participant who was unable to correctly answer the attention question was deleted from the final sample. Maybe a bigger sample could also help to increase the quality of the data (i.e., increase statistical power) and facilitate the comparison of the three models. The next section depicts study 1B, conducted with a bigger sample and different measures for attributions.

3.8.4 Study 1B: Procedure

Study 1B was also a survey. The purpose of this study was to repeat the investigation conducted in study 1A with a different sample and different measures for causal attributions. Rather than using the panel from the Ghent University, participants were recruited from Amazon Mechanical Turk. Total sample size was 117 (57% women, M_{age}=37.01, SD_{age}=13.64) after deleting respondents with at least one of the following characteristics:

- Incorrect answer for the attention question (14 respondents). The same question from study 1A was used;
- Described situations unrelated to service failure (19 respondents);
- Described situations that were rated below 5 on a 7-point stress scale (10 respondents).

Due to the fact that causal controllability attribution had an extremely low Cronbach Alpha in study 1A and also because attributions had such a small influence over emotions, we decided to try other attribution measures in study 1B. Thus, we used a revised version of the previous attribution measures (McAuley, Duncan, & Russell, 1992) in which the way controllability is assessed drastically changes while the other items remain the same. Now controllability is divided into personal (i.e., internal) and external controllability. Besides McAuley et al.'s scale, single items were also used to measure causal attributions. There was one item to measure locus on the customer, one item to measure locus on the company/employee, one item for locus on other customers, one item for stability, and one item for controllability. If the problem with the small effects of attributions on emotions in study 1A was due to a bad performance of Russell's (1982) scale – although this scale has been used in

many papers – these changes in attributions' measures of study 1B could solve it. Several measures from study 1A were used again in study 1B. Table 10 does not repeat the items that are the same from study 1A, it only provides the Cronbach Alphas for the scales and introduces the items that are different from the first study. The order of the scales in the table is the same order they appeared in the questionnaire.

Table 10 – Measures from study 1B

Name of the variable, Cronbach alpha or correlation, source	**Item(s)**
Regret, α=.84, Yi and Baumgartner (2004)	Same items from study 1A
Anger, α=.93, Yi and Baumgartner (2004)	Same items from study 1A
Disappointment, α=.81, Yi and Baumgartner (2004)	1) Disappointed 2) Let down 3) Hopes dashed
Guilt	Same item from study 1A
Fear	Same item from study 1A
Actual complaining behavior	Same item from study 1A
Actual switch behavior	Same item from study 1A
Actual negative word-of-mouth (NWOM) behavior, α=.92, Joireman et al. (2013)	Same items from study 1A
Causal locus attribution, α=.78, McAuley et al. (1992) and Russell (1982)	Same items from study 1A
Causal stability attribution, α=.48[5], McAuley et al. (1992) and Russell (1982)	Same items from study 1A
Personal controllability attribution, α=.86, McAuley et al. (1992)	The cause is something… 1) Manageable by you / Not manageable by you 2) You can regulate / You cannot regulate 3) Over which you have power / Over which you have no power
External controllability attribution, α=.80, McAuley et al. (1992)	1) Under the power of other people / Not under the power of other people 2) Over which others have control / Over which others have no control 3) Other people can regulate / Other people cannot regulate

[5] The Cronbach Alpha increases from .48 to .58 by deleting the second item. In study 1A, it was the deletion of the third that led to a higher Alpha. Despite of the low Alpha, we chose to keep the three items for analyses since results from study 1A and 1B do not converge when it comes to which is the problematic item (i.e., the item that pulls the Cronbach Alpha down).

Locus attribution (on the customer) – single item	1) To what extent was the situation described caused by you
Locus attribution (on the company) – single item	1) To what extent was the situation described caused by the service company/employee
Locus attribution (on other customers) – single item	1) To what extent was the situation described caused by other customers
Stability attribution – single item	1) To what extent is the cause of the situation described stable
Controllability attribution – single item	1) To what extent was the situation described controllable by you or other people
Motivational (Goal) relevance appraisal	Same item from study 1A
Motivational (Goal) congruence appraisal, *r*=.77	Same items from study 1A
Self-accountability appraisal, Smith et al. (1993)	Same item from study 1A
Other-accountability appraisal, Smith et al. (1993)	Same item from study 1A
Problem-focused coping potential appraisal	Same item from study 1A
Emotion-focused coping potential appraisal	Same item from study 1A
Future expectancies appraisal	Same item from study 1A
Past control, α=.82, Frazier et al. (2011)	Same items from study 1A
Present control, α=.73, Frazier et al. (2011)	Same items from study 1A
Future control, α=.85, Frazier et al. (2011)	Same items from study 1A
Future likelihood, α=.94, Frazier et al. (2012)	Same items from study 1A

3.8.5 Study 1B: Results

The deleted situations that were unrelated to service failures referred to life situations such as car accident, end of a romance, and problems in the workplace. Some examples of service failures described by participants include uncaring or rude treatment, problems with the payment process, incorrect service bills, poor or undelivered service, and long waiting time.

Similar to study 1A, indicators of collinearity were examined. The highest correlation for the temporal model of perceived control was the one between past and future control (*r*=.40). Table 11 shows the correlation matrix for the temporal model of perceived control. The highest

correlation among the four attributions[6] was the one between locus and personal controllability (*r*=.63). The highest correlation among the seven appraisals was the one between self- and other accountability (*r*=-.52).

Table 11 – Correlation matrix: temporal model of perceived control (study 1B)

	Past Control	Present Control	Future Control	Future Likelihood
Past Control	1.00	-.04	.40***	-.02
Present Control	-.04	1.00	.13	-.11
Future Control	.40***	.13	1.00	-.07
Future Likelihood	-.02	-.11	-.07	1.00

* $p<.05$, ** $p<.01$, *** $p<.001$.

Tolerance values for the components of the temporal model of perceived control were above .80, while VIF values were below 2. Tolerance values for the four attributions were above .50, while VIF values were below 2. Similarly, tolerance values for the seven appraisals were above .50 and VIF values were below 2. According to the reference values suggested by Hair et al. (2005), there is no evidence of collinearity for the IVs of the temporal model of perceived control, attributions, and appraisals.

The correlations between the temporal model of perceived control and (a) attributions and (b) appraisals are presented in tables 12 and 13 respectively. The highest correlation among components of perceived control and attributions was between past control and personal controllability attribution (*r*=-.43). The highest correlation among components of perceived control and appraisals was between past control and self-accountability (*r*=.63).

[6] The first analyses of this chapter regarding attributions refer to the attributions measured using McAuley et al.'s (1992) scale. Analyses containing the single items that were also used to measure attributions are presented later in this chapter to compare the scale performance versus the single items performance on explaining emotion and behavior variances.

Table 12 – Correlation matrix: temporal model of perceived control and attributions (study 1B)

	Past Control	Present Control	Future Control	Future Likelihood
Locus	-.38***	.05	-.11	.16
Stability	-.03	.26**	.09	.02
Personal Controllability	-.43***	-.12	-.27**	.06
External Controllability	.22*	-.12	.02	-.09

* p<.05, ** p<.01, *** p<.001.

Table 13 – Correlation matrix: temporal model of perceived control and appraisals (study 1B)

	Past Control	Present Control	Future Control	Future Likelihood
Relevance	.31***	.07	.20*	-.18*
Congruence	.28**	-.07	.18	-.09
Self-accountability	.63***	-.10	.32***	-.02
Other-accountability	-.36***	.09	-.09	.17
Problem-focused coping potential	.18*	.13	.26**	-.09
Emotion-focused coping potential	.21*	.18	.15	-.11
Future expectancies	-.02	.27**	.21*	-.24**

* p<.05, ** p<.01, *** p<.001.

Just like study 1A, multiple regression analyses were conducted with the following variables as IVs:

- Components from the temporal model of perceived control;
- Attributions;
- Appraisals;
- Attributions + components from the temporal model of perceived control;
- Appraisals + components from the temporal model of perceived control.

The variance explained percentage (R^2 x 100) of each emotion and behavior regressed on the aforementioned IVs is depicted in tables 14 and 15. This study measured an extra emotion which was not measured in study 1A: disappointment. Since Smith et al. (1993) did not investigate disappointment in their study, there was no specification about which appraisals should lead to this emotion. In study 1A, we had this same issue with all the behaviors we

measured. The procedure we adopted there was to include all the seven appraisals in the regression analyses of such behaviors. We repeated this same procedure here in study 1B for the behaviors we measured and disappointment with one change: we did not include the appraisal of self-accountability when regressing disappointment. This decision was due to the fact that such emotion is described on the literature as being unrelated to self-accountability – disappointment is perceived as caused by circumstances rather than the self (Van Dijk & Zeelenberg, 2002; Zeelenberg et al., 1998; Zeelenberg & Pieters, 1999).

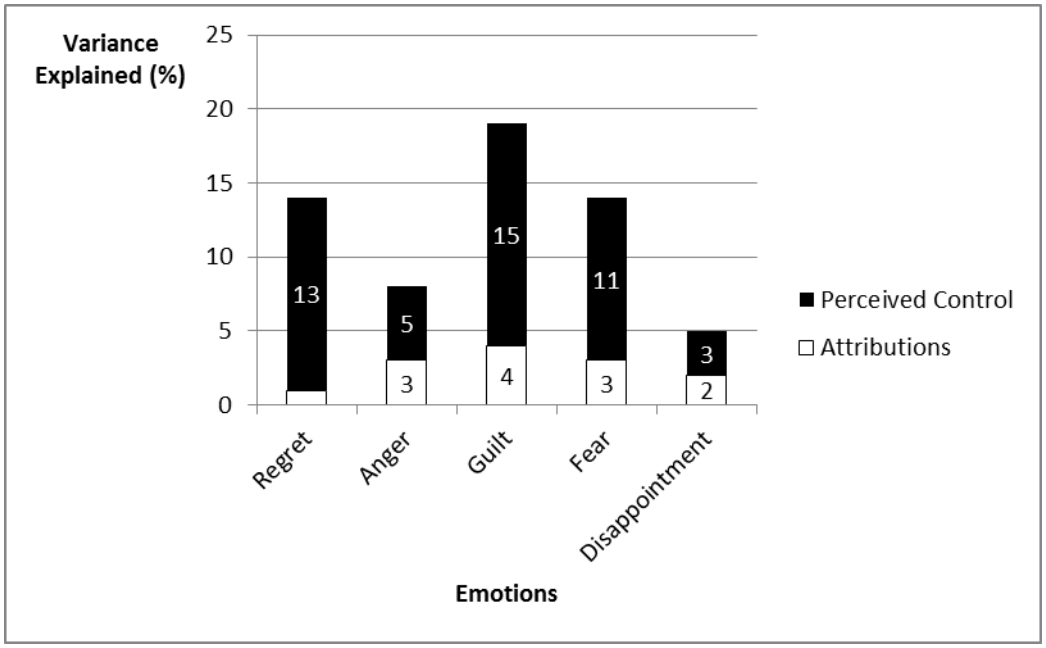
Table 14 – Emotions explanation by each of the cognitive models (study 1B)

	% emotion variance explained by each approach (R^2 x 100)			Extra % emotion variance explained from adding:	
Emotion	Perceived control (k=4)	Attributions (k=4)	Appraisals (k=3 to 6)	Perceived control to Attributions	Perceived Control to Appraisals
Regret	11*	1	1	13*	11
Anger	7	3	11**	5	4*
Guilt	16**	4	18***	15**	5***
Fear	12**	3	7	11*	10**
Disappointment	2	2	5	3	2

* p<.05, ** p<.01, *** p<.001.
k corresponds to the number of independent variables used in the multiple regression analyses.

According to table 14, guilt (R^2=.16, p< .01) and fear (R^2=.12, p<.01) were the emotions that the temporal model of perceived control could explain better in study 1B. This differs from study 1A, in which regret and anger were the emotions best explained by the temporal model of perceived control. In general, the explained variance in emotions was lower in study 1B when compared with study 1A. The highest R^2s in study 1A (when regressing emotions on the temporal model of perceived control) were .33 (for regret) and .22 (for anger), while in study 1B, the highest values were .16 (for guilt) and .12 (for fear). R^2 values were also lower when emotions were regressed on attributions and appraisals. The highest R^2 when considering attributions as IVs in study 1B was .04 (for guilt) versus .20 in study 1A (for fear). And the highest R^2 when considering appraisals as IVs in study 1B was .18 (for guilt) versus .33 in study 1A (also for guilt). Despite these general lower variance explanations, we see perceived control performing better than attributions to explain regret, guilt, and fear, and better than appraisals to explain regret and fear. Figure 8 shows how much attributions can account for emotions variance explanation together with the temporal model of perceived control.

Figure 8 – Emotions variance explained by attributions + perceived control (study 1B)



Although the explained variance (R^2) in emotions was lower in the present study when compared to study 1A, figure 8 shows that the temporal model of perceived control may be helpful when combined with the attribution model in the context of stressful service episodes. The figure shows that such temporal model had a higher contribution to explain emotions than the attribution model. Figure 9 shows the same type of graphic for emotions regressed on the appraisal model together with the temporal model of perceived control.

Figure 9 – Emotions variance explained by appraisals + perceived control (study 1B)

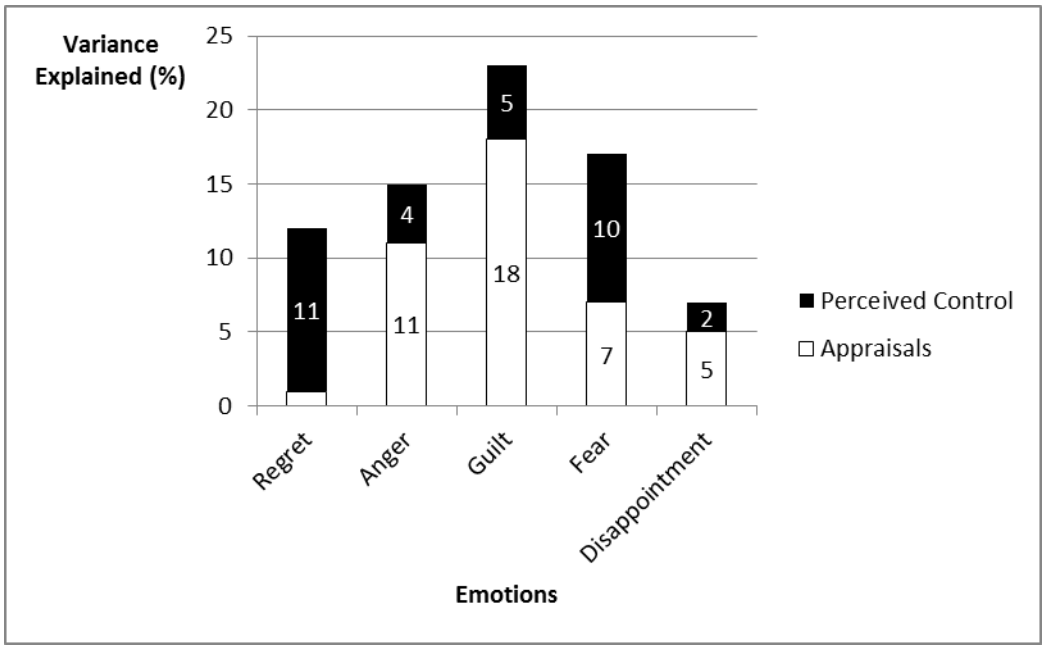


Figure 9 shows that regret and fear variance explained are the ones with higher increase when adding the temporal model of perceived control to the appraisal model. Regret variance explained was non-significant when regret was regressed on the appraisal model alone (R^2=1, p>.05) and kept on being non-significant when adding the temporal model to the regression (R^2=12, p>.05). Fear, in turn, was non-significant for the appraisal model alone (R^2=7, p>.05) and became significant when adding the temporal model of perceived control (R^2=17, p<.01). As in study 1A, behaviors were also regressed on the three cognitive models. Table 15 shows the percentage of explained variance in behavior by each model.

Table 15 – Behaviors explanation by each of the cognitive models (study 1B)

	% emotion variance explained by each approach (R^2 x 100)			Extra % emotion variance explained from adding:	
Behavior	Perceived control (k=4)	Attributions (k=4)	Appraisals (k =7)	Perceived control to Attributions	Perceived Control to Appraisals
Switch (actual)	9	8	10	6	13
NWOM (actual)	8*	9*	18**	6*	3**
Complaint (actual)	11*	11**	14*	6*	7**

* p<.05, ** p<.01, *** p<.001.
k corresponds to the number of independent variables used in the multiple regression analyses.

The temporal model of perceived control did not outperform the attribution and appraisal models to explain customers' behavioral reactions. However, figures 10 and 11 show that perceived control may increase attributions' and appraisals' explanatory power for customers' behavioral reactions.

Figure 10 – Behaviors variance explained by attributions + perceived control (study 1B)

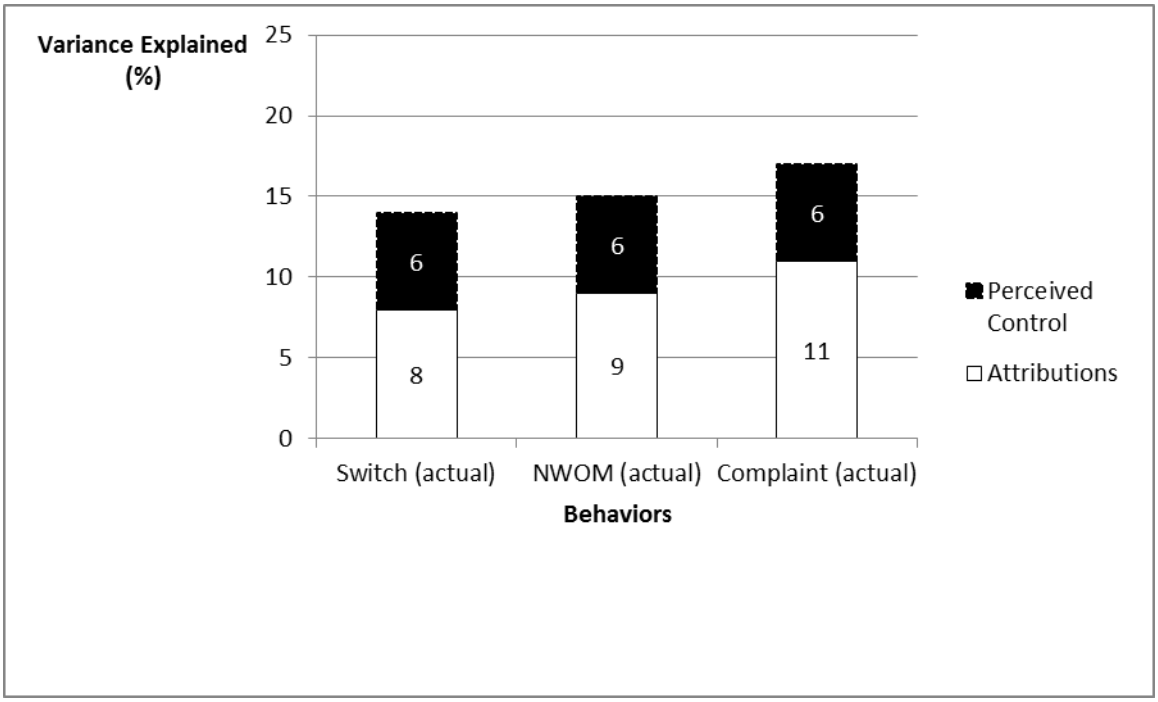


Figure 11 – Behaviors variance explained by appraisals + perceived control (study 1B)

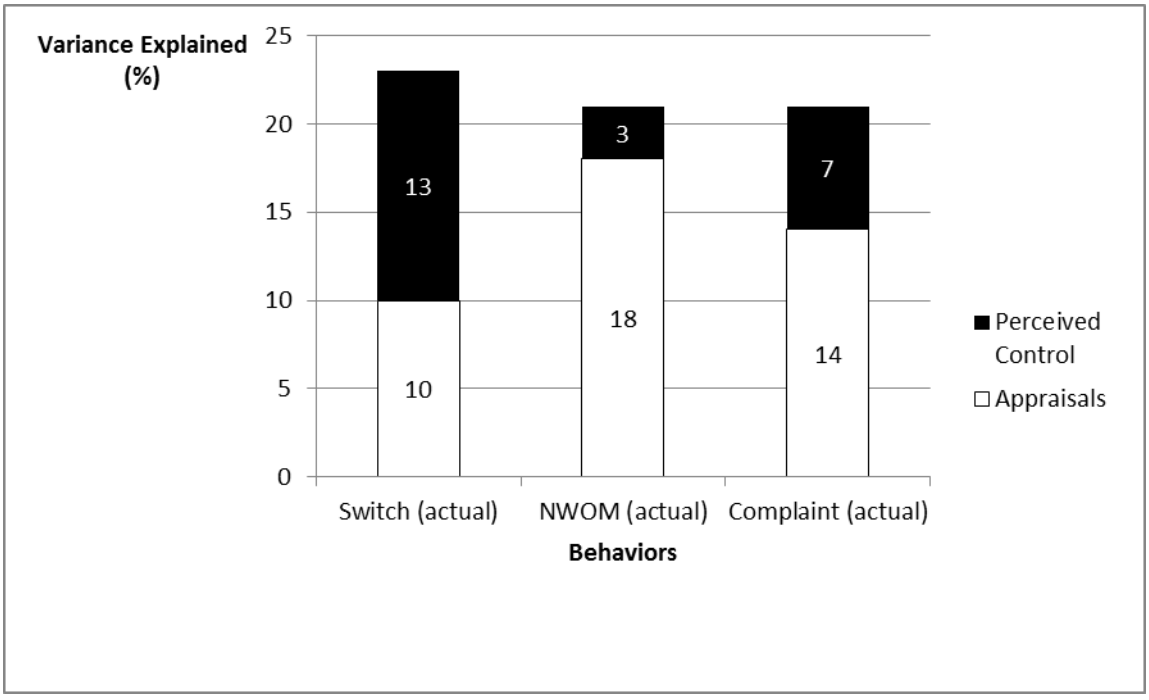


Table 16 shows how much (in percentage) of the emotions and behaviors explained variance is due to each of the cognitive models. Just as in study 1A, the standardized betas were used to calculate this share of explanation (i.e., the sum of the standardized betas from the temporal model of perceived control was compared with the sum of the standardized betas from

the attribution model – first and second numerical columns – and from the appraisal model – third and fourth numerical columns).

Table 16 – Share of explanation according to the standardized betas (study 1B)

	Attributions + Perceived control		Appraisals + Perceived control	
	Attributions	Perceived control	Appraisals	Perceived control
Regret	26%	74%	18%	82%
Anger	34%	66%	58%	42%
Guilt	36%	64%	48%	52%
Fear	33%	67%	46%	54%
Disappointment	43%	57%	72%	28%
Switch (actual)	50%	50%	57%	43%
NWOM (actual)	50%	50%	74%	26%
Complaint (actual)	39%	61%	65%	35%

Based on data from table 16, the temporal model of perceived control explains a larger portion of regret, anger, guilt, fear, disappointment, and complaint behavior than the attribution model does. It also explains a larger portion of regret, guilt, and fear than the appraisal model does.

As the variance explanations were still surprisingly low when regressing emotions to the four attributions – even though we changed the attribution scale – another set of regression analyses was conducted using the single items instead of the attribution scale. The purpose was to detect if the low explanatory power of attributions was due to a bad performance of McAuley et al.'s (1992) scale for this study. A comparison of the results from this new set of regressions with the previous results is presented in table 17. The second column (i.e., first numerical column) shows emotions and behaviors variance explained by the attributions measured through McAuley et al.'s (1992) scale. The third column shows variances explained by three single items (i.e., locus on the customer, stability, and controllability). The fourth column, variances explained by five single items (i.e., locus on the customer, locus on the company/employee, locus on other customers, stability, and controllability). The fifth column shows variances explained by the temporal model of perceived control to facilitate comparisons.

Table 17 – Emotions and behaviors variances explained by attributions scale versus single items (study 1B)

	% emotion variance explained (R^2 x 100)			
	McAuley et al.'s (1992) attribution scale (k=4)	Attributions single items (k=3)	Attributions single items (k=5)	Perceived control (k=4)
Regret	1	2	3	11*
Anger	3	8*	11*	7
Guilt	4	19***	25***	16**
Fear	3	6	14**	12**
Disappointment	2	9*	10*	2
Switch (actual)	8	1	7	9
NWOM (actual)	9*	6	18***	8*
Complaint (actual)	11**	8*	12*	11*

* $p<.05$, ** $p<.01$, *** $p<.001$.
k corresponds to the number of independent variables used in the multiple regression analyses.

Table 17 shows that the single items used to measure attributions performed better than the attribution scale. Using five single items (measuring three variations of locus – on the customer, on the company, and on other customers – plus controllability and stability) leads to even higher variance explained by attributions than using only three single items or the attribution scale. Perceived control keeps a higher explanation for regret but has similar or lower explanation for other emotions and behaviors when compared to the five single items used to measure attribution.

3.8.6 Study 1B: Discussion

Even though the variance explained in emotions and behaviors was lower in the present study when compared to study 1A, there are still indications that the temporal model of perceived control sometimes can perform better than the attribution and appraisal models and that the temporal model may be combined with these other models to gain a clearer understanding of customers' emotional and behavioral reactions after a stressful service episode. Because of this lower explanatory power of the three cognitive models under investigation and because variances explained by attributions in study 1B were still surprisingly low (except when using single items), a third survey (study 1C) was conducted. This study had an even larger sample and different attribution measures. Study 1C is detailed next.

3.8.7 Study 1C: Procedure

Participants were recruited through Amazon Mechanical Turk. The same procedure from studies 1A and 1B was conducted (i.e., asking participants to remember and describe a stressful service episode). Total sample size was 205 (65% women, M_{age}=37.89, SD_{age}=12.12) after deleting respondents with at least one of the following characteristics:

- Incorrect answer for the attention question (19 respondents). The same question from studies 1A and 1B was used;
- Described situations unrelated to service failure (3 respondents);
- Described situations that were rated below 5 on a 7-point stress scale (43 respondents).

The only changes compared to the previous studies refer to some of the measures used and a larger sample. Table 18 shows which measures remain the same and which ones have changed. Since the attribution scales from Russell (1982) and McAuley et al. (1992) were not very successful in explaining variance in emotions in the previous surveys, we used a modified version of these scales. The modifications were based on how other authors (Chu, Song, & Choi, 2013; Hess et al., 2003, 2007) have adapted the original scales in their studies. Appraisals underwent small changes, such as replacing "good for your goals" for "good for you" and adding "at the time the situation occurred" before some items. Also, we split anger into two different types: self-focused anger (i.e., when one is anger with oneself), and other-focused anger (i.e., a customer angry with the service company or employee). The order of the scales in table 18 is the same order they were presented in the questionnaire.

Table 18 – Measures from study 1C

Name of the variable, Cronbach alpha or correlation, source	Item(s)
Regret, α=.76, Yi and Baumgartner (2004)	Same items from studies 1A and 1B
Self-focused anger	1) Angry with myself
Other-focused anger	1) Angry with the service company/employee
Disappointment, α=.77, Yi and Baumgartner (2004)	Same items from study 1B
Guilt	Same item from studies 1A and 1B
Fear	Same item from studies 1A and 1B

Dissatisfaction	1) Dissatisfied
Actual complaining behavior	Same item from study 1A and 1B
Actual switch behavior	Same item from study 1A and 1B
Actual negative word-of-mouth (NWOM) behavior, α=.90, Joireman et al. (2013)	Same items from studies 1A and 1B
Third party action, α=.73, (Singh, 1988, 1989)	1) I took a legal action against the service provider 2) I complained or reported what happened to a consumer agency 3) I wrote to a complaint website (e.g., consumeraffairs.com, complaints.com, etc.) about my bad experience
Causal locus attribution, α=.76, Chu et al. (2013), McAuley et al. (1992) and Russell (1982)	1) The cause reflected an aspect of yourself (e.g., your choices) / The cause did not reflect an aspect of yourself 2) The cause had to do with you / The cause had to do with others 3) The cause was about you / The cause was about others
Causal stability attribution, α=.52[7], Hess et al. (2003), McAuley et al. (1992) and Russell (1982)	1) The cause was something occurring frequently / The cause was something occurring infrequently 2) The cause was something stable over time / The cause was something variable over time 3) The cause was something permanent / The cause was something temporary 4) The cause was something unchangeable / The cause was something changeable
Customer (internal) controllability attribution, α=.89	1) The cause was not at all controllable by you / The cause was definitely controllable by you 2) The cause was not at all preventable by you / The cause was definitely preventable by you 3) The cause was not at all avoidable by you / The cause was definitely avoidable by you
Company (external) controllability attribution, α=.90, Hess et al. (2007)	1) The cause was not at all controllable by the service provider / The cause was definitely controllable by the service provider 2) The cause was not at all preventable by the service provider / The cause was definitely preventable by the service provider 3) The cause was not at all avoidable by the service provider / The cause was definitely avoidable by the service provider
Locus attribution (on the customer) – single item	Same item from study 1B
Locus attribution (on the company) – single item	Same item from study 1B

[7] The Cronbach Alpha increases from .52 to .57 by deleting the first item, which was not part of Russell's (1982) scale but rather an extra item used by Hess et al. (2003) when adapting Russell's items. Since the Alpha did not improve with the extra item and given that we used the three original items in the previous surveys, we kept using the same three items (i.e., items 2, 3, and 4).

Locus attribution (on other customers) – single item	Same item from study 1B
Stability attribution – single item	Same item from study 1B
Controllability attribution – single item	1) To what extent was the situation described preventable by you or other people
Motivational (Goal) relevance appraisal	Same item from studies 1A and 1B
Motivational (Goal) congruence appraisal, *r*=.47	Same items from studies 1A and 1B
Self-accountability appraisal, Smith et al. (1993)	Same items from studies 1A and 1B
Other-accountability appraisal, Smith et al. (1993)	Same items from studies 1A and 1B
Problem-focused coping potential appraisal	Same items from studies 1A and 1B
Emotion-focused coping potential appraisal	Same items from studies 1A and 1B
Future expectancies appraisal	Same items from studies 1A and 1B
Past control, α=.77, Frazier et al. (2011)	Same items from studies 1A and 1B
Present control, α=.78, Frazier et al. (2011)	Same items from studies 1A and 1B
Future control, α=.87, Frazier et al. (2011)	Same items from studies 1A and 1B
Future likelihood, α=.93, Frazier et al. (2012)	Same items from studies 1A and 1B

3.8.8 Study 1C: Results

The situations that were unrelated to service failures referred to problems in the workplace. The service failure situations referred to rude treatment, unfulfilled promises, incorrect service bill, poor service, and poor complaint handling, among others.

The highest correlation among the components of the temporal model of perceived control was between past and future control (*r*=.38). The highest correlations among attributions (measured through the scale) was between customer controllability and locus attribution (*r*=-.46) and the highest correlation among appraisals was between emotion-focused and problem-focused coping potential (*r*=.51). Table 19 shows the correlations among components of the temporal model of perceived control. Tables 20 and 21 present the correlations between the temporal model of perceived control and (a) attributions and (b)

appraisals respectively. The highest correlation among components of perceived control and attributions was between past control and customer controllability attribution (*r*=.68). The highest correlation among components of perceived control and appraisals was between past control and self-accountability (*r*=.64).

Table 19 – Correlation matrix: temporal model of perceived control (study 1C)

	Past Control	Present Control	Future Control	Future Likelihood
Past Control	1.00	.13	.38***	-.06
Present Control	.13	1.00	.14*	-.06
Future Control	.38***	.14*	1.00	-.28***
Future Likelihood	-.06	-.06	-.28***	1.00

* $p<.05$, ** $p<.01$, *** $p<.001$.

Table 20 – Correlation matrix: temporal model of perceived control and attributions scale (study 1C)

	Past Control	Present Control	Future Control	Future Likelihood
Locus	-.41***	.01	-.22**	.12
Stability	-.12	.08	-.11	.07
Customer Controllability	.68***	.05	.29***	-.08
Company Controllability	-.15*	.06	.02	.11

* $p<.05$, ** $p<.01$, *** $p<.001$.

Table 21 – Correlation matrix: temporal model of perceived control and appraisals (study 1C)

	Past Control	Present Control	Future Control	Future Likelihood
Relevance	.00	.01	.14*	-.09
Congruence	.13	-.06	.01	-.03
Self-accountability	.64***	.00	.29***	-.10
Other-accountability	-.35***	.13	.01	.00
Problem-focused coping potential	.05	.12	.13	-.06
Emotion-focused coping potential	.14*	.11	.18*	-.11
Future expectancies	.25***	.19**	.15*	-.09

* $p<.05$, ** $p<.01$, *** $p<.001$.

Tolerance values for the components of the temporal model of perceived control were above .70, while VIF values were below 2. Similarly, tolerance values for the four attributions were above .70, while VIF values were below 2. Tolerance values for the seven appraisals were above .60 and VIF values were below 2. According to the reference values suggested by Hair et al. (2005), there is no evidence of collinearity for the IVs of the temporal model of perceived control, attributions, and appraisals.

Table 22 shows the percentage of emotions variance explained by each of the cognitive models. Because the single items used to measure attributions performed better than the scale used in study 1B, this time the table brings two columns for attributions: one for the results when using the modified scale items and another for the five single items (i.e., locus on the customer, locus on the company, locus on other customers, stability, and controllability). Despite the existence of the single items, most of the comparisons between the temporal model of perceived control and the attribution model use the attribution scale rather than the single items. The purpose is to keep on working with attribution scales just like it was done in studies 1A and 1B, comparing a multi-item scale (i.e., each component of the temporal model of perceived control is measured by multi-items) with attribution dimensions that were also measured with multi-items. Besides, most of the studies about controllability and stability attributions on service failure contexts use multi-item scales, which usually have a higher impact on customer outcomes (i.e., negative word-of-mouth and satisfaction) than single-items (Van Vaerenbergh et al., 2014). Thus, it seems fair and conservative to use the attribution scale when comparing attributions with perceived control.

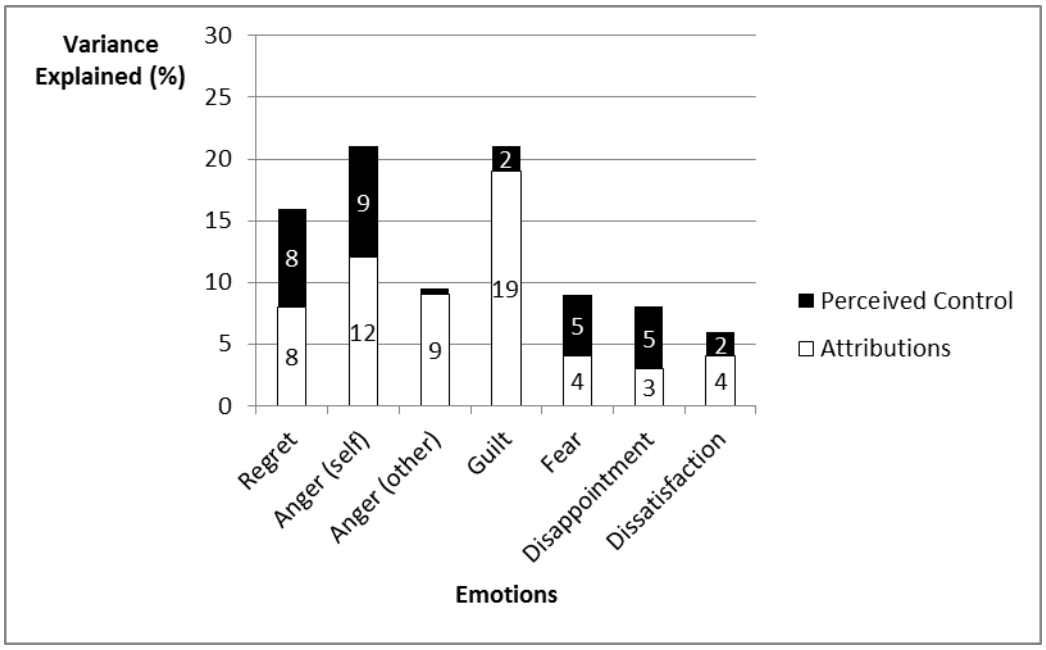
It is possible to see in table 22 that the temporal model of perceived control can significantly explain variances in regret, self-focused anger, guilt, fear, and disappointment. Some of these emotions can also be significantly explained by the attribution and appraisal models. On the one hand, we seem to have the temporal model of perceived control explaining some emotions (e.g., regret and self-focused anger) better than the attribution and appraisal models. But on the other hand, attributions and/or appraisals can significantly explain variances of some variables (e.g., other-focused anger and dissatisfaction) that perceived control cannot. In fact, appraisals were the only independent variables that could significantly explain all the emotions measured in this study. We can also see that the temporal model of perceived control combined with the attribution and appraisal models increases the explanatory power for some emotions, especially regret and self-focused anger. Figures 12 and 13 show such increase in variance explanation when adding perceived control to attributions and appraisals respectively.

Table 22 – Emotions explanation by each of the cognitive models (study 1C)

	% emotion variance explained by each approach (R^2 x 100)				Extra % emotion variance explained from adding:	
Emotion	Perceived control (k=4)	Attributions scale (k=4)	Attributions single items (k=5)	Appraisals (k=3 to 7)	Perceived control to Attributions scale	Perceived Control to Appraisals
Regret	13***	8**	2	10***	8***	7***
Anger (self)	19***	12***	10**	15***	9***	7***
Anger (other)	3	9**	7*	8**	< 1*	1*
Guilt	16***	19***	15***	27***	2***	2***
Fear	6*	4	8**	8**	5*	7***
Disappointment	7**	3	2	9**	5*	5**
Dissatisfaction[8]	3	4	7*	10**	2	1*

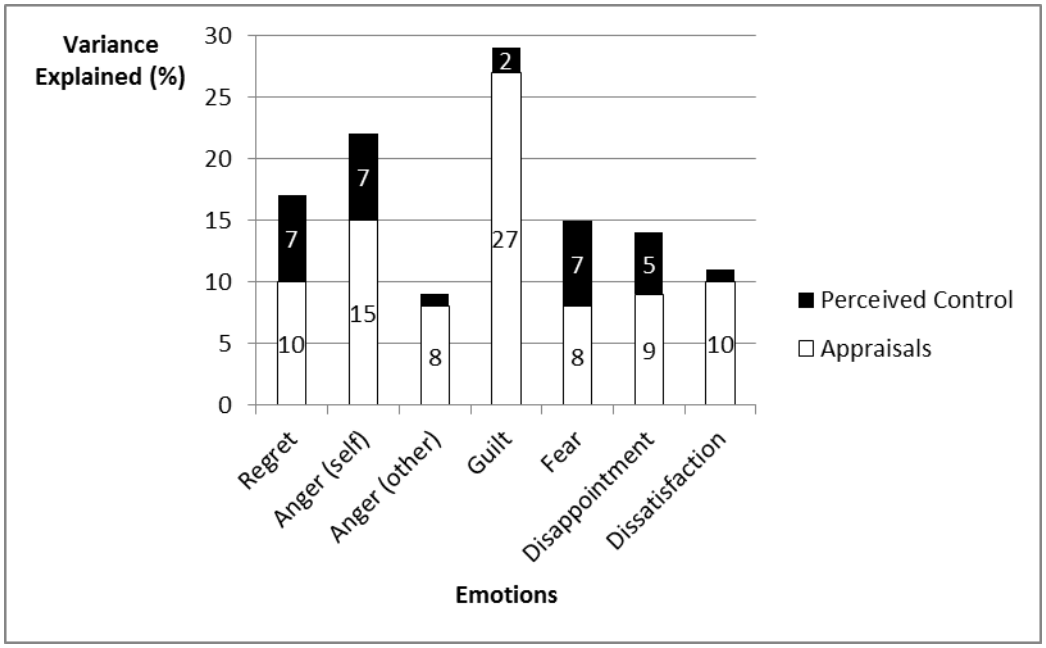
* p<.05, ** p<.01, *** p<.001.
k corresponds to the number of independent variables used in the multiple regression analyses.

Figure 12 – Emotions variance explained by attributions + perceived control (study 1C)



[8] The extent to which dissatisfaction should be classified as an emotion may be debatable. Although (dis)satisfaction may be referred to as a cognition or decision following a comparison between performance and expectation (Oliver, 1980), it is measured with emotional items such as happy, (dis)pleased, contented, and frustrated (Oliver, 1980; Spreng, Mackenzie, & Olshavsky, 1996; Tsiros et al., 2004). We acknowledge both cognitive and emotional components of (dis)satisfaction and present dissatisfaction results together with other emotions results.

Figure 13 – **Emotions variance explained by appraisals + perceived control (study 1C)**



We see in figures 12 and 13 that the larger contributions of the temporal model of perceived control to the attribution and appraisal models refer to explained variance in regret, self-focused anger, fear, and disappointment. Table 23 shows explained variance in behaviors.

Table 23 – Behaviors explanation by each of the cognitive models (study 1C)

	% emotion variance explained by each approach (R^2 x 100)				Extra % emotion variance explained from adding:	
Behavior	Perceived control (k=4)	Attributions scale (k=4)	Attributions single items (k=5)	Appraisals (k=7)	Perceived control to Attributions scale	Perceived Control to Appraisals
Switch (actual)	14***	3	6	3	14***	17***
NWOM (actual)	4	6*	3	7*	4*	3*
Complaint (actual)	4	4	3	10**	2	2**
Third party action (actual)	2	2	5*	2	1	3

* p<.05, ** p<.01, *** p<.001.
k corresponds to the number of independent variables used in the multiple regression analyses.

We see in table 23 that switch behavior variance is explained better by the temporal model of perceived control (R^2=.14, p<.001) than the attribution (R^2=.03, p>.05) and appraisal models (R^2=.03, p>.05). Nevertheless, negative word-of-mouth and complaint behaviors can be significantly explained by attributions and/or appraisals but not by perceived control. Figure 14 shows behaviors variance explained by the attribution model together with the temporal model

of perceived control. Figure 15 does the same for the appraisal model plus the temporal model of perceived control. We see in both figures that the larger contribution of perceived control refers to explained variance in switch behavior.

Figure 14 – Behaviors variance explained by attributions + perceived control (study 1C)

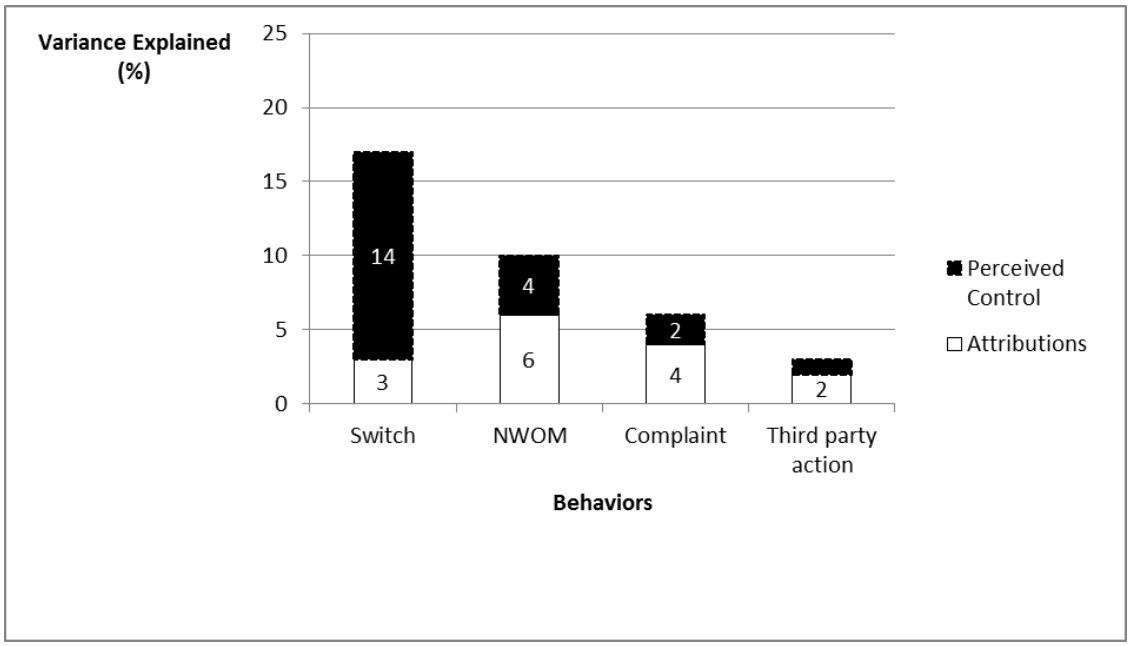
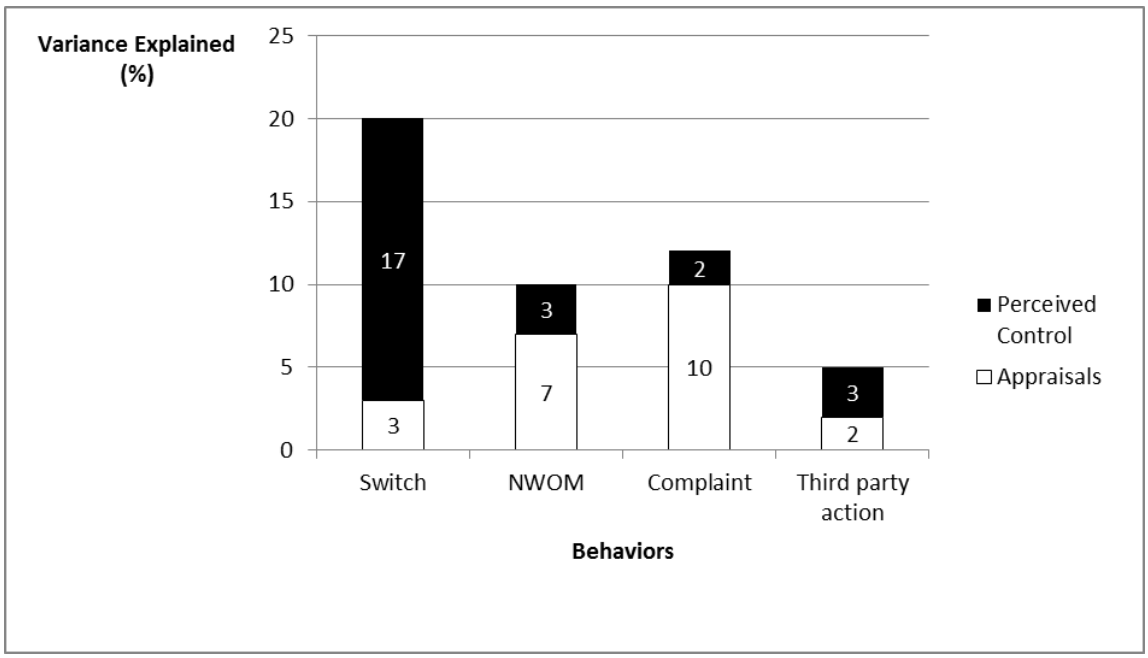


Figure 15 – Behaviors variance explained by appraisals + perceived control (study 1C)



So far, the tables and figures of this section used as main input emotions and behaviors variance explained (R^2) by the three cognitive models. Next, table 24 uses as main input the

standardized betas of regressions that contained attributions plus perceived control or appraisals plus perceived control as IVs. These standardized betas are used to compute the share of explanation of each model for the emotions and behaviors measured in this study.

Table 24 – Share of explanation according to the standardized betas (study 1C)

	Attributions + Perceived control		Appraisals + Perceived control	
	Attributions	Perceived control	Appraisals	Perceived control
Regret	41%	59%	38%	62%
Anger (self)	40%	60%	38%	62%
Anger (other)	79%	21%	68%	32%
Guilt	62%	38%	72%	28%
Fear	44%	56%	55%	45%
Disappointment	33%	67%	53%	47%
Dissatisfaction	46%	54%	75%	25%
Switch (actual)	33%	67%	45%	55%
NWOM (actual)	48%	52%	63%	37%
Complaint (actual)	41%	59%	66%	34%
Third party action (actual)	52%	48%	61%	39%

According to table 24, when regressing several emotions and behaviors on the attribution model plus the temporal model of perceived control, the latter has a higher share of explanation for regret, self-focused anger, fear, disappointment, dissatisfaction, switch, negative word-of-mouth, and complaint behaviors than the former. When regressing the same emotions and behaviors on the appraisal model plus the temporal model of perceived control, the latter has a higher share of explanation for regret, self-focused anger, and switch behavior.

Before moving on to the discussion section, which will discuss the results from this and the previous studies, extra analyses were conducted with a database comprising all the respondents from the three surveys reported in this chapter. The next section reports the results obtained with such database.

3.8.9 Results based on a common database of studies 1A, 1B, and 1C

The three surveys reported in this chapter had many things in common. First, all of them adopted the same procedure of asking participants to remember a stressful service failure, describe it, and answer some questions afterwards. Second, all the surveys used the same items to measure the components of the temporal model of perceived control. Third, all the surveys measured customer regret, guilt, anger[9], fear, complaint, switch, and NWOM. Because of this similarities, a database comprising all the respondents from each survey was created to conduct further analyses. This database has 384 respondents (62 from study 1A, 117 from study 1B, and 205 from study 1C). The purpose of adding all the respondents in a common database was to have a bigger sample, which could lead to more solid and reliable results.

Since the items adopted to measure attributions and appraisals changed across the studies, it would be impossible (or incorrect) to compare the explanatory power of these models with the temporal model of perceived control. So, rather than comparing the three cognitive models as we have done so far, this section goes deeper into the effects of the temporal model in each of the emotions and behaviors mentioned in the previous paragraph. It shows which of the components of the model are significantly impacting such emotions and behaviors. It does so by providing the regression tables for each emotion and behavior, in which we can see the individual impact of past, present, future control, and future likelihood.

The benefit of such analysis is to gain some knowledge about the effects of each of these components on emotional and behavioral reactions to stressful service failures. The theoretical background had some suggestions about the impact of each component on regret and anger (e.g., positive effect of past control on regret, negative effect of present control on regret and anger, etc.) but such effects had not been analyzed during this chapter. The regression analyses presented in this section are not proof of causal effect, neither the survey method from studies 1A, 1B, and 1C. The regression analyses show if there is a significant relationship between the dependent and independent variables and the direction of such relationship (positive versus

[9] Studies 1A and 1B measured anger while study 1C measured self-focused anger and other-focused anger. Analyses from this chapter used the latter (i.e., other-focused anger), together with anger measures from studies 1A and 1B, because this is the type of anger consistent with the concept of anger widely used and mentioned during the literature review.

negative). We do not intend to show the results as evidence of causal effects, but rather explore if there are significant relationships between the components of the temporal model of perceived control and customer emotional and behavioral reactions and the direction of such relationships. Table 25 provides the regression coefficients regarding regret regressed on the four components of the temporal model of perceived control.

Table 25 – Regret regressed on the temporal model of perceived control

					Collinearity Statistics	
	β	*SE*	*t*	*p*	Tolerance	VIF
Past Control	.14	.069	2.59	.010	.84	1.20
Present Control	-.13	.088	-2.67	.008	.98	1.02
Future Control	.16	.059	2.78	.006	.79	1.27
Future Likelihood	-.02	.053	-.46	.644	.94	1.07

The temporal model significantly explained 7% of regret variance (R^2=.07, p<.001). Table 25 shows that three components of the temporal model of perceived control had significant impact on regret: past control (β=.14, p<.05), present control (β=-.13, p<.01), and future control (β=.16, p<.01). Based on the valence of their regression coefficients (positive versus negative), we may infer that past and future control are positively related to regret, while present control is negatively related to regret. So, the perception that one could have prevented a stressful service failure is associated with a high level of regret, while the perception that one can control how one thinks and feels about the service failure is associated with a low level of regret. Such relationships were predicted in the theoretical background. However, it was not predicted that the perception that one will be able to prevent a stressful service failure in the future would be associated with a high level of regret. Table 26 shows regression coefficients for guilt.

Table 26 – Guilt regressed on the temporal model of perceived control

					Collinearity Statistics	
	β	*SE*	*t*	*p*	Tolerance	VIF
Past Control	.33	.04	6.36	.000	.84	1.20
Present Control	-.11	.05	-2.36	.019	.98	1.02
Future Control	.06	.04	1.13	.261	.79	1.27
Future Likelihood	-.05	.03	-1.07	.284	.94	1.07

The temporal model significantly explained 14% of guilt variance (R^2=.14, p<.001). Two components of the model had significant impact on guilt: past control (β=.33, p<.001) and present control (β=-.11, p<.05). High levels of past control are associated with high levels of

guilt, while high levels of present control are associated with low levels of guilt. Both types of control are related to guilt in the same way they are related to regret. This is not surprising due to the common characteristics between these two emotions (e.g., both refer to self-blame), mentioned during the literature review. Table 27 shows the regression coefficients for anger.

Table 27 – Anger regressed on the temporal model of perceived control

					Collinearity Statistics	
	β	*SE*	*t*	*p*	Tolerance	VIF
Past Control	-.23	.05	-4.15	.000	.84	1.20
Present Control	-.13	.07	-2.61	.009	.98	1.02
Future Control	.19	.04	3.32	.001	.79	1.27
Future Likelihood	.06	.04	1.10	.271	.94	1.07

The temporal model significantly explained 7% of anger variance (R^2=.07, p<.001). Past control (β=-.23, p<.001), present control (β=-.13, p<.01), and future control (β=.19, p<.01) were significantly related to anger. So, high past and present control levels are associated with low levels of anger, while high levels of future control are associated with high anger level. The relationships between past control and anger as well as present control and anger converge with the relationship expected during the theoretical background section, but the positive relationship between future control and anger was unexpected. Table 28 shows regression coefficients for fear.

Table 28 – Fear regressed on the temporal model of perceived control

					Collinearity Statistics	
	β	*SE*	*t*	*p*	Tolerance	VIF
Past Control	.15	.59	2.78	.006	.84	1.20
Present Control	-.19	.07	-3.84	.000	.98	1.02
Future Control	.08	.09	1.38	.167	.79	1.27
Future Likelihood	-.04	.06	-.79	.433	.94	1.07

The temporal model significantly explained 7% of fear variance (R^2=.07, p<.001). Past (β=.15, p<.01) and present control (β=-.19, p<.001) were significantly related to fear, such that high perceived past control was associated with high fear level, while high perceived present control was associated with low fear level. Table 29 shows regression coefficients for switch behavior.

Table 29 – Switch regressed on the temporal model of perceived control

					Collinearity Statistics	
	β	*SE*	*t*	*p*	Tolerance	VIF
Past Control	.01	.10	.10	.924	.84	1.20
Present Control	-.06	.13	-1.10	.274	.98	1.02
Future Control	.16	.09	2.90	.004	.79	1.27
Future Likelihood	-.07	.08	-1.32	.189	.94	1.07

The temporal model significantly explained 4% of switch variance (R^2=.04, p<.01). Only future control was significantly related to switch behavior (β=.16, p<.01), indicating that customers who believe they will be able to prevent the recurrence of a service failure also demonstrate high switch behavior. Table 30 shows regression coefficients for complaint behavior.

Table 30 – Complaint regressed on the temporal model of perceived control

					Collinearity Statistics	
	β	*SE*	*t*	*p*	Tolerance	VIF
Past Control	-.28	.09	-5.23	.000	.84	1.20
Present Control	-.06	.11	-1.19	.236	.98	1.02
Future Control	.23	.08	4.06	.000	.79	1.27
Future Likelihood	.01	.07	.11	.916	.94	1.07

The temporal model significantly explained 8% of complaint variance (R^2=.08, p<.001). Past (β=-.28, p<.001) and future control (β=.23, p<.001) are significantly associated with complaint behavior. The result suggests that customers who perceived they could have prevented a stressful service failure tend to present low level of complaint behavior, while customers who perceived they will be able to prevent a stressful service failure tend to present high level of complaint. Table 31 shows regression coefficients for NWOM.

Table 31 – NWOM regressed on the temporal model of perceived control

					Collinearity Statistics	
	β	*SE*	*t*	*p*	Tolerance	VIF
Past Control	-.17	.08	-3.17	.002	.84	1.20
Present Control	-.12	.10	-2.32	.021	.98	1.02
Future Control	.17	.07	2.92	.004	.79	1.27
Future Likelihood	.12	.06	2.35	.019	.94	1.07

The temporal model significantly explained 6% of NWOM variance (R^2=.06, p<.001). All the four components of the temporal model were significantly related to NWOM. Past

control (β=-.17, p<.01) and present control (β=-.12, p<.05) were negatively associated with NWOM, while future control (β=.17, p<.01) and future likelihood (β=.12, p<.05) were positively associated with NWOM. Table 32 summarizes whether the components of the temporal model of perceived control are significantly related to customer reactions, indicating the direction of the significant relationships.

Table 32 – Summary of the relationships between the components of temporal model of perceived control and customers' reactions

	Regret	Guilt	Anger	Fear	Switch	Complaint	NWOM
Past Control	+	+	-	+	n.s.	-	-
Present Control	-	-	-	-	n.s.	n.s.	-
Future Control	+	n.s.	+	n.s.	+	+	+
Future Likelihood	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	+

"+" corresponds to a significant positive relationship, "-" corresponds to a significant negative relationship, "n.s." corresponds to a non-significant relationship.

The next section resumes and discusses results from the three studies and examines what we may infer from the relationships obtained with this common database.

3.8.10 Discussion

This section discusses not only results from study 1C but also the results of all surveys conducted so far and compares it to the results from Smith et al. (1993). In order to enable such comparison, results are summarized in a few tables. Table 33 compares results from studies 1A, 1B, 1C as well as results from Smith et al. (1993), using just the emotions that are the same in all four studies: anger, guilt, and fear. Smith and colleagues did not measure other emotions (e.g., regret and disappointment) and behaviors (e.g., complaint and switch) that were measured in this chapter. This table shows emotions variance explained by attributions only.

Table 33 – Emotions explained by attributions in four studies

	% emotion variance explained by Attributions (R^2 x 100)			
	Study 1A (k=3)	Study 1B (k=4)	Study 1C (k=4)	Smith et al. (1993) (k=13)
Anger[10]	2	3	9**	30***
Guilt	12	4	19***	28***
Fear	20**	3	4	23**

* p<.05, ** p<.01, *** p<.001.
k corresponds to the number of independent variables used in the multiple regression analyses.

We see in table 33 that despite some low variances explained by attributions in studies from this dissertation (i.e., studies 1A, 1B, and 1C), some of the results were not that much different from variances explained by attributions in Smith and colleagues' study. For instance, fear variance explained was almost the same in study 1A and Smith and colleagues' study (R^2=.20 and R^2=.23 respectively), both with the same significance level (p<.01). Guilt variance explained had the same significance level in study 1C and Smith and colleagues' study (p<.001). Anger was significant in study 1C (p<.01), though its significance level was not as strong as it was on Smith and colleagues' study (p<.001). So, these three emotions that could be significantly explained by attributions in Smith et al.'s (1993) study could also be significantly explained by attributions in at least one of this dissertation studies.

The use of different attribution measures (i.e., modified scales and single items) throughout the studies of this chapter is an endeavor to find correct and comparable results for attributions. The intent of the research conducted here is not to praise the temporal model of perceived control by making attributions look bad or seem like a poor approach to explain customer reactions after stressful services. On the contrary, we tried to find the best possible results for attributions and check whether the temporal model of perceived control could still be of any help to understand customer emotional and behavioral reactions. And we may see throughout these three studies that the temporal model of perceived control could always help the attribution model to explain some emotions and behaviors variance. Table 34 shows anger, guilt, and fear variances explained by appraisals in the same four studies of the previous table.

[10] Anger was divided into self- and other-focused in study 1C. The values reported in tables 33 and 34 for study 1C refer to other-focused anger because anger is usually conceptualized as an other-focused emotion (e.g., Bonifield & Cole, 2007) and the other studies from these tables did not measure self-focused anger.

Table 34 – Emotions explained by appraisals in four studies

	% emotion variance explained by Appraisals (R^2 x 100)			
	Study 1A (k=3)	Study 1B (k=3)	Study 1C (k=3)	Smith et al. (1993) (k=3)
Anger	18**	11**	8**	42***
Guilt	33***	18***	27***	27***
Fear	12*	7	8**	14***

* p<.05, ** p<.01, *** p<.001.

According to table 34, some of the variances explained by appraisals in Smith and colleagues' study are close to the variances explained by appraisals in the studies of this chapter. For instance, guilt explained variance in studies 1A (R^2=.33), 1B (R^2=.18), and 1C (R^2=.27) had the same significance level from Smith and colleagues' study (R^2=.27, p<.001). Anger explained variance was significant in Smith et al.'s (1993) study (R^2=.42, p<.001) as well as in studies 1A (R^2=.18, p<.01), 1B (R^2=.11, p<.01), and 1C (R^2=.33, p<.01). Fear explained variance was also significant in Smith et al.'s (1993) study (R^2=.14, p<.001) and in studies 1A (R^2=.12, p<.05) and 1C (R^2=.08, p<.01). The fact that some of the results for appraisals and attributions were close to the results of Smith and colleagues – even though the measures used in studies 1A, 1B, and 1C are not exactly the same from Smith et al. (1993) – reinforces the credibility of the studies from this chapter. Table 35 summarizes emotions and behaviors variances explained by the temporal model of perceived control in all three studies.

Table 35 – Emotions and behaviors explained by the temporal model of perceived control in three studies

	% emotion and behavior variance explained by Perceived Control (R^2 x 100)		
	Study 1A (k=4)	Study 1B (k=4)	Study 1C (k=4)
Regret	33***	11*	13***
Anger	22**	7	3
Guilt	13	16**	16***
Fear	8	12**	6*
Disappointment	N/A	2	7**
Switch (actual)	27**	9	14***
NWOM (actual)	12	8*	4
Complaint (actual)	4	11*	4

* p<.05, ** p<.01, *** p<.001.
Emotions and behaviors that were measured only in one study (e.g., self-focused anger, third party action, desire for revenge, etc.) are not in this table.

According to table 35, the temporal model of perceived control could significantly explain regret variances in all three studies. It could also significantly explain guilt variance in studies 1B and 1C. When it comes to anger as an other-focused emotion, perceived control

could significantly explain anger variance only in study 1A. But in study 1C, perceived control could significantly explain self-focused anger (R^2=.19, p<.001) – this result is not in the table because self-focused anger was measured only in study 1C. Such results regarding regret, anger (self- and other-focused), and guilt suggest that the temporal model of perceived control may be especially helpful when it comes to self-focused rather than other-focused emotions. But that does not mean that it cannot be helpful when it comes to other type of emotions, such as fear and disappointment. The temporal model of perceived control could also significantly explain fear and disappointment variances.

If we had to select the emotion that the temporal model of perceived control could better explain so far, it would be regret. Regret is the only emotion that was significantly explained by this model in all three studies. Besides, when adding the perceived control model to the attribution model, the former had a higher share of explanation than the latter in studies 1A (75% of regret explained variance was explained by perceived control), 1B (74%), and 1C (59%). And by adding the temporal model to the appraisal model, the former had a higher share of explanation than the latter in studies 1A (54%), 1B (82%), and 1C (62%).

And if we had to select the behavior that the temporal model of perceived control could better explain so far, it would be switch behavior. Despite the non-significant result in study 1B, the model of perceived control could significantly explain actual switch behavior variance in studies 1A and 1C, and also switch intention in study 1A (R^2=.18, p<.05). When using perceived control and attributions in the same regressions, switch behavior was better explained by the former than the latter in studies 1A (78% of switch explained variance was explained by perceived control) and 1C (67%). When using perceived control and appraisals in the same regressions, switch was better explained by the former in studies 1A (66%) and 1C (55%). But even in the study in which switch was better explained by appraisals, perceived control share of explanation is higher than 40%, which is a considerable high share of explanation.

One of the limitations of studies 1A, 1B, and 1C was to assess appraisals with items created for the studies instead of the original items used by Smith et al. (1993) and Smith and Lazarus (1993). This happened because most of the items were not disclosed by the authors. Even with this limitation, appraisals performed better than attributions on predicting emotional reactions after service stressful episodes – the result we expected based on Smith et al.'s (1993) study. Appraisals also performed better than the temporal model of perceived control in many situations. Perhaps with the original items, appraisals could have even better results. So, maybe it is not completely fair to compare the temporal model of perceived control's performance with

appraisals' performance. But it is still possible to argue that the temporal model of perceived control performed better than attributions on predicting customers' emotional reactions.

One methodological concern is that the use of self-reported measures in studies like these may lead to common method bias, a situation in which the variance found is due to the method used to collect the data rather than the relationships among the constructs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, the use of self-measures was necessary because it is the most appropriate way of measuring what someone thinks (cognitive reactions), how someone feels (emotional reactions), and what a person did (behavioral reactions) after a service failure. To avoid the occurrence of common method bias, some actions suggested by Podsakoff et al. (2003) were taken: (1) different response scales were adopted, such as scales anchored by the agreement level (e.g., "totally disagree" and "totally agree") and bipolar items (i.e., "permanent" versus "temporary"); (2) constructs were measured in different questionnaire pages to create some distance among them; (3) constructs that were expected to influence other constructs were measured at the end of the questionnaire (i.e., perceived control, attributions, and appraisals were measured after emotional and behavioral reactions); (4) participants were informed that their identity would remain anonymous.

Regarding the regression analyses conducted with a common database for the three studies (i.e., the sum of all respondents reported in section 3.8.9), there are a few things to be discussed: First, the low tolerance values and high VIF values suggest that there is no collinearity among the four components of the temporal model of perceived control. In other words, they really measure different types of control. Second, the four components were significantly related to at least one emotional or behavioral reaction. This shows how important the temporal dimension is. If one looks only at past control when trying to figure out how customers will react to a service failure, one will miss the significant effects of present control, future control, and future likelihood. Third, according to Frazier et al.'s (2012) findings, it was expected that future control would impact future likelihood which, in turn, would impact emotional reactions. But results show that future control had significant effects on emotional reactions, while future likelihood had not, suggesting that the impact of future control on emotions does not depend on perceived future likelihood.

Future control was positively related to regret and anger. So, customers who think they will be able to prevent the recurrence of a service failure feel regretful and angry. But why? Maybe when customers foresee a solution for a failure they may regret the fact they did not think about it before or feel angry with the service provider for not having anticipated such solution. Such results are not surprising when we look at findings from Frazier et al. (2011)

showing a positive relationship between future control and distress. Besides, future control was positively related to switch, complaint, and NWOM. At first, such results may seem intriguing. For instance, why would someone complaint and switch if this person has already figured out how to prevent the recurrence of the service failure? But complaint and switch behaviors could be the tactic to prevent the failure. Also, switch is a natural consequence of regret, while complaint and NWOM are consequences of anger (Bougie et al., 2003; Cho & Song, 2012; Weiner, 2000; Zeelenberg & Pieters, 1999). Thus, the positive association of future control with regret and anger helps to explain the positive association of future control with switch, complaint, and NWOM.

Past and present control were associated with regret in the same way as suggested in prior literature: past control was positively related to regret, while present control was negatively related to regret. The same relationships were established when regressing guilt rather than regret on the temporal model of perceived control. Past control was related to high guilt level, while present control was related to low guilt level. This is totally coherent since regret and guilt are very similar in content (Zeelenberg & Breugelmans, 2008). Anger was also related to past and present control in the same way suggested by the literature review: both types of control were negatively related to anger. Similar to what happened with regret and guilt, fear was positively related to past control and negatively related to present control. Fear was not significantly related to future control and future likelihood. And this is somehow unexpected. It would make more sense to find significant relationships of fear with future control and future likelihood rather than past control because fear is produced by danger or threat (Smith et al., 1993) and expectancies of failure (Weiner, 2000). In other words, fear is associated with the possibility of something bad happening in the future.

Past control was negatively related to complaint and NWOM. Such result is convergent with the fact that complaining and NWOM are associated with external rather than internal attribution (Folkes, 1984). In other words, customers who think they could have prevented a service failure (i.e., past control) may attribute at least some of the blame to themselves (i.e., internal attribution) which, in turn, should discourage them to complaint to the service provider or telling others negative things about such provider. Present control was negatively related to NWOM. This is also an expected result, because present control seems to be negatively related to emotions that could lead to NWOM, such as anger. Finally, from all the emotions and behaviors that were regressed using the common database, future likelihood was only significantly related to NWOM, such that high future likelihood was related to high NWOM. This could indicate a minor contribution of future likelihood in explaining customers' emotional

and behavioral reactions to a service failure when compared to past, present, and future control. Nevertheless, all the discussion derived from the common database is just a preliminary effort in determining the potential effects of the temporal model of perceived control on customers' reactions to service failures. More studies could help to gain a deeper understanding of this model.

Altogether, studies 1A, 1B, and 1C indicate that the temporal model of perceived control may be helpful to investigate customer's emotional and behavioral reactions after a stressful service episode. In order to further investigate the helpfulness of such model, we conducted an experimental study. In this study, we hold causal attribution constant (i.e., service provider's fault) and manipulate one of the variables of the temporal model: past control. The idea is to investigate whether the perception that one could have prevented a stressful service from happening vs. the perception that one could not have prevented such stressful service (i.e., high vs. low past control) may affect customer emotional and behavioral reactions when the service provider is the one to blame. By conducting such study, we suggest one way to combine the different cognitive models to analyze consequences of a stressful service.

3.9 STUDY 2

Past control was manipulated (high vs. low) on an external causal locus context. So, the service employee was the one to blame for the stressful service episode, but the customer was induced to think s/he could have prevented (vs. could not have prevented) the stressful situation. It was a single factor between subjects experiment. Participants were recruited via Mechanical Turk. Total sample size was 123 (50% women, M_{age}=36.17, SD_{age}=13.88) after deleting respondents with at least one of the following characteristics:

- Incorrect answer for the attention question (20 respondents). The same question from previous studies was used;
- Stress level was rated below 5 on a 7-point stress scale (37 respondents).

3.9.1 Procedure

Participants received a text to read. The situation described in the text was based on a stressful service episode reported by a participant from one of the surveys previously described in this chapter. Table 36 shows the two different texts to which participants were randomly assigned.

Table 36 – Experimental manipulation

High Past Control	Low Past Control
"Imagine that you had a problem with your car and you took it to a repair shop. After a quick look at your car, the mechanic says that it seems someone has been doing unsuccessful attempts to fix your car and asks if that was you. You answer that **you indeed did some things in order to fix the problem but that you soon enough realized the work was beyond your capabilities**. The mechanic is clearly upset and starts mentioning everything that is wrong with the car. He treats you in a very rude and impolite way, almost yelling at you. He complains about all the work it will take to fix your car. You feel very bad about the way he treats you. At the same time, you do realize that **you could have done something to prevent your car problems to become this serious, since you actually aggravated the problem when trying to fix it**."	"Imagine that you had a problem with your car and you took it to a repair shop. After a quick look at your car, the mechanic says that it seems someone has been doing unsuccessful attempts to fix your car and asks if that was you. You answer that no, **you did nothing in order to fix the problem because you soon enough realized the work was beyond your capabilities**. The mechanic is clearly upset and starts mentioning everything that is wrong with the car. He treats you in a very rude and impolite way, almost yelling at you. He complains about all the work it will take to fix your car. You feel very bad about the way he treats you. At the same time, you do realize that **there was nothing you could have done to prevent your car problems to become this serious, since you didn't do anything wrong to the car**."

The potentially[11] stressful service situation to which participants were exposed was the rude treatment by the service provider. Rude treatments by service personnel are considered a type of failure (Roschk & Gelbrich, 2013) and a potential source of stress (Duhachek, 2005). Such a rude behavior of the mechanic – which is inexcusable in any service situation – should trigger external causal locus attribution, both for respondents in the low and the high perceived past control condition. Participants in the high past control scenario could have prevented the mechanic's fury and consequent rude treatment if only they had not aggravated the car problems, while there was nothing participants in the low past control scenario could have done to prevent the mechanic's fury and rude behavior.

[11] It is potentially stressful because stress is subjective – what may be stressful to someone may be not stressful to someone else (Duhacheck, 2005; Moschis, 2007; Stephens & Gwinner, 1998).

Past control manipulation check consisted of one of the past control scale items (adapted to the described context): “I could have done something to prevent such bad situation at the repair shop”. There was also an external causal locus manipulation check, because although we did not have different levels for causal locus (e.g., internal x external), we wanted to check whether participants indeed had the perception that the fault was on the service employee, who should not have been rude. The external manipulation check was “To what extent was the bad situation at the repair shop caused by the mechanic?” Besides the manipulation checks, there was an item to assess the realism of the situation: “The situation with the repair shop is: Impossible to happen to someone in real life / Possible to happen to someone in real life.”

Table 37 shows the items used to measure the variables of this study. All the variables were measured with 7-point scales, including the already mentioned manipulation checks and the scenarios credibility. The order of the scales in the table is the same order they appeared in the questionnaire.

Table 37 – Measures from study 2

Name of the variable, Cronbach alpha, source	**Item(s)**
Regret, α=.73, Yi and Baumgartner (2004)	Same items from studies 1A, 1B, and 1C
Self-focused anger	Same item from study 1C
Other-focused anger	Same item from study 1C
Disappointment, α=.73, Yi and Baumgartner (2004)	Same items from study 1B and 1C
Guilt	Same item from studies 1A, 1B, and 1C
Fear	Same item from studies 1A, 1B, and 1C
Complaining intention	Same item from study 1A
Switch intention	Same item from study 1A
Negative word-of-mouth (NWOM) intention, α=.92,	Same items from studies 1A, 1B, and 1C
Present control, α=.82, Frazier et al. (2011)	Same items from studies 1A, 1B, and 1C
Future control, α=.85, Frazier et al. (2011)	Same items from studies 1A, 1B, and 1C
Future likelihood, α=.94, Frazier et al. (2012)	Same items from studies 1A, 1B, and 1C

3.9.2 Results

Scenarios were perceived as highly and equally realistic by participants from both experimental conditions (M_{low}=6.51, SD_{low}=.82 vs. M_{high}=6.52, SD_{high}=.82, p>.10). ANOVA revealed that the past control manipulation was effective (F(1, 121)=53.80, p<.001). Participants in the low past control condition reported lower past control than participants in the high past control condition (M_{low}=2.02, SD_{low}=1.57, M_{high}=4.19, SD_{high}=1.70).

The general mean for the external causal locus manipulation check was high (M=5.81), indicating that participants recognized that the mechanic has caused the bad situation at the repair shop. But there was a significant effect of past control on external locus attribution (F(1, 121)=7.75, p<.01), such that participants in the low past control condition reported more external locus attribution (M=6.22; SD=1.48) than participants in the high past control condition (M=5.44; SD=1.63). This means that external locus attribution varied even though the text about the rude treatment was exactly the same for both experimental conditions.

Past control had a significant effect on regret. Participants in the high past control condition reported higher regret (M=4.96, SD=1.47) than participants in the low past control condition (M=4.18, SD=1.50; F(1, 121)=8.42, p<.01). This is consistent with what was expected based on the theoretical background presented in this chapter. Table 38 shows more details about the effect of past control on regret.

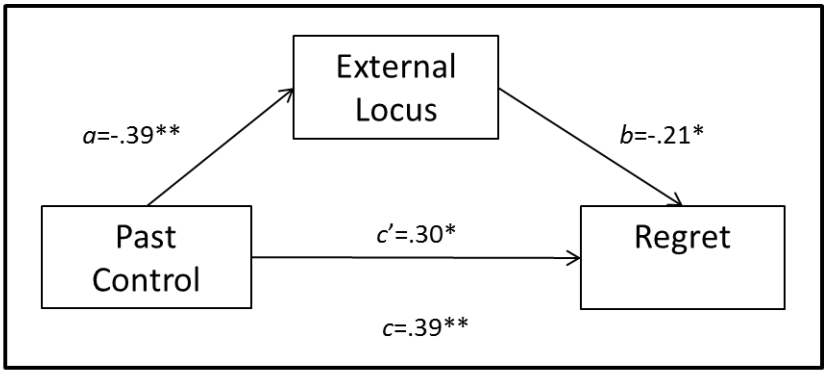
Table 38 – Effect of past control on regret (study 2)

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*
Corrected Model	18.56	1	18.56	8.42	.004
Intercept	2564.11	1	2564.11	1163.64	.000
Past control	18.56	1	18.56	8.42	.004
Error	266.63	121	2.20		
Total	2871.33	123			
Corrected Total	285.19	122			

Since past control had a significant effect on locus attribution and attributions, in turn, are deemed to affect emotions (Folkes, 1984, Weiner, 2000), a mediation analysis was conducted to further investigate how exactly past control, locus attribution, and regret relate. A mediation analysis conducted using PROCESS (model 4; 5,000 bootstrap samples) (Hayes, 2013) showed that the effect of past control on regret was partially mediated by external causal

locus (*a*=-.39, *b*=-.21, *ab*=.08). The confidence interval for the indirect effect through external causal locus did not include zero (from .01 to .20), which indicates that the mediation exists. When considering external locus as a mediator, the direct effect of past control on regret remained significant (*c*'=.30, *p*<.05), which indicates that external locus is not completely mediating the effect of past control on regret and there may exist other mediators (Zhao, Lynch, & Chen, 2010). The total effect was significant (*c*=.39, *p*<.01). Figure 16 shows data from the mediation analysis.

Figure 16 – Indirect effect of past control on regret (study 2)



* *p*<.05, ** *p*<.01, *** *p*<.001

Past control had also a significant effect on guilt. Participants in the high past control condition reported to feel more guilty (*M*=4.02, *SD*=1.85) than participants in the low past control condition (*M*=2.03, *SD*=1.54; *F*(1, 121)=41.34, *p*<.001). This is also consistent with what was expected. Table 39 shows more details about the effect of past control on guilt.

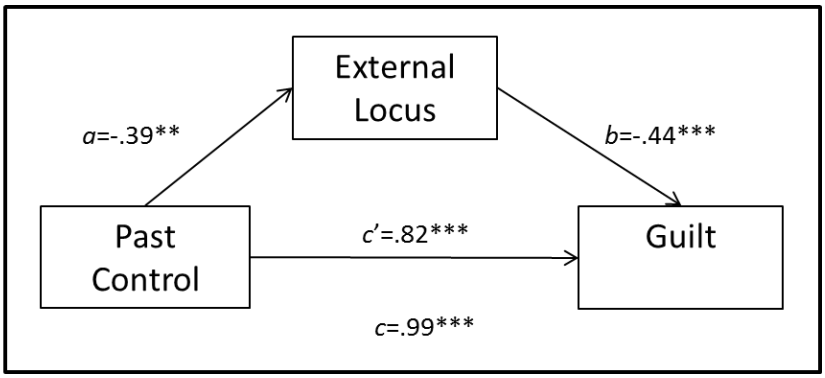
Table 39 – Effect of past control on guilt (study 2)

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*
Corrected Model	120.56	1	120.56	41.34	.000
Intercept	1123.49	1	1123.49	385.20	.000
Past control	120.56	1	120.56	41.34	.000
Error	352.92	121	2.92		
Total	1629.00	123			
Corrected Total	473.48	122			

The effect of past control on guilt was also partially mediated by external causal locus (*a*=-.39, *b*=-.44, *ab*=.17), since the confidence interval for the indirect effect did not include

zero (from .04 to .34) and the direct effect of past control on guilt remained significant (*c*'=.82, *p*<.001). The total effect was significant (*c*=.99, *p*<.001). Figure 17 shows data from this mediation analysis.

Figure 17 – Indirect effect of past control on guilt (study 2)



* *p*<.05, ** *p*<.01, *** *p*<.001

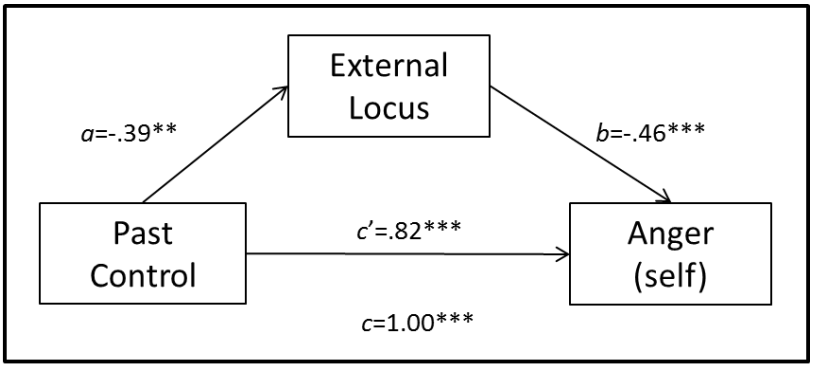
Past control had a significant effect on self-focused anger. Participants in the high past control condition reported to feel more angry with themselves (*M*=4.39, *SD*=1.94) than participants in the low past control condition (*M*=2.39, *SD*=1.61; *F*(1, 121)=38.40, *p*<.001). This is also consistent with what was expected. Table 40 shows more details about the effect of past control on self-focused anger.

Table 40 – Effect of past control on self-focused anger (study 2)

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*
Corrected Model	122.89	1	122.89	38.40	.000
Intercept	1411.38	1	1411.38	440.98	.000
Past control	122.89	1	122.89	38.40	.000
Error	387.27	121	3.20		
Total	1958.00	123			
Corrected Total	510.16	122			

The effect of past control on self-focused anger was partially mediated by external causal locus (*a*=-.39, *b*=-.46, *ab*=.18). The confidence interval for the indirect effect did not include zero (from .04 to .36) and the direct effect of past control on guilt remained significant (*c*'=.82, *p*<.001). The total effect was significant (*c*=1.00, *p*<.001). Figure 18 shows data from this mediation.

Figure 18 – Indirect effect of past control on self-focused anger (study 2)



* $p<.05$, ** $p<.01$, *** $p<.001$

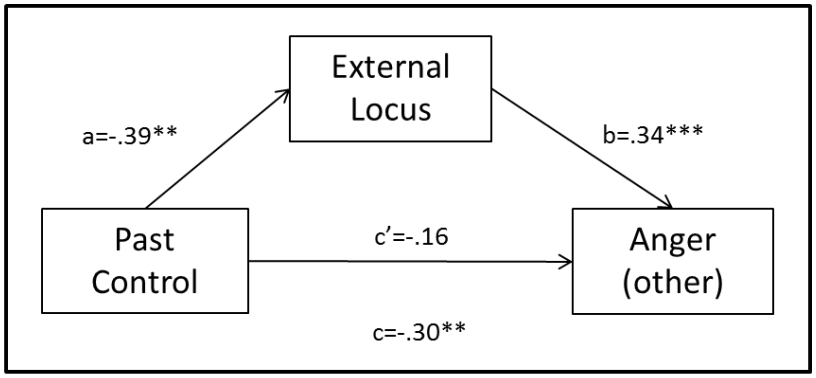
Other-focused anger was also affected by past control. Participants in the high past control condition reported to feel less angry with the mechanic (M=5.64, SD=1.35) than participants in the low past control condition (M=6.24, SD=.95; $F(1, 121)=7.90$, $p<.01$), consistent with what was expected. Table 41 shows more details about the effect of past control on other-focused anger.

Table 41 – Effect of past control on other-focused anger (study 2)

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*
Corrected Model	10.93	1	10.93	7.90	.006
Intercept	4331.19	1	4331.19	3130.44	.000
Past control	10.93	1	10.93	7.90	.006
Error	167.41	121	1.38		
Total	4499.00	123			
Corrected Total	178.34	122			

The effect of past control on other-focused anger was fully mediated by external causal locus (a=-.39, b=.34, ab=-.13). The confidence interval for the indirect effect did not include zero (from -.29 to -.03). When considering external locus as a mediator, the direct effect of past control on other-focused anger became non-significant (c'=-.16, $p>.05$), but the total effect was significant (c=-.30, $p<.01$). Figure 19 shows data about this mediation.

Figure 19 – Indirect effect of past control on other-focused anger (study 2)



* $p<.05$, ** $p<.01$, *** $p<.001$

Besides the effects on the emotions of regret, guilt, self- and other-focused anger, past control also affected some of the participants' behavioral intentions. For instance, switch intention was significantly lower in the high past control (M=6.36, SD=1.12) than in the low past control condition (M=6.76, SD=.60; F(1, 121)=6.08, p<.05). Table 42 shows more data about this effect.

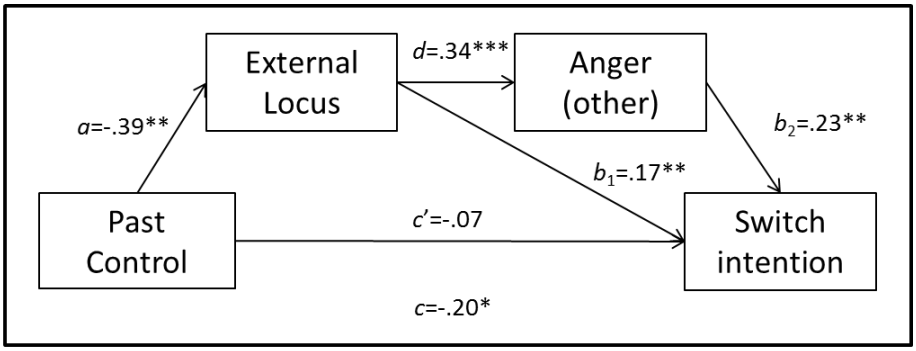
Table 42 – Effect of past control on switch intention (study 2)

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*
Corrected Model	4.99	1	4.99	6.08	.015
Intercept	5286.07	1	5286.07	6433.95	.000
Past control	4.99	1	4.99	6.08	.015
Error	99.41	121	.82		
Total	5386.00	123			
Corrected Total	104.41	122			

The effect of past control on switch intention was fully mediated by external causal locus and other-focused anger. This analysis was conducted with model 6 from PROCESS (Hayes, 2013). The confidence intervals for the indirect effect through external causal locus and other-focused anger did not include zero (ranging from -.18 to -.003). The direct effect became non-significant when considering both external locus and other-focused anger as mediators (c'=-.07). The total effect was significant (c=-.20). Results suggest that the more customers think they could have prevented a service failure, the less they blame the service provider, the less angry with the service provider they feel and such reduced external blame and

anger leads to less intention to switch to another service provider. Figure 20 shows the indirect effect through external locus attribution and other-focused anger.

Figure 20 – Indirect effect of past control on switch intention (study 2)



* $p<.05$, ** $p<.01$, *** $p<.001$

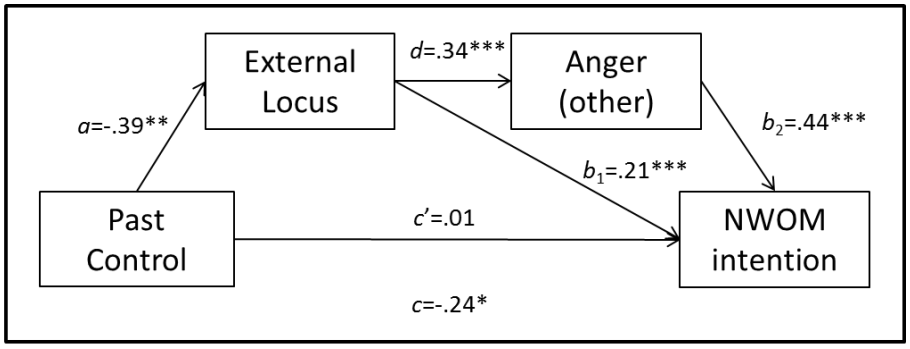
NWOM was significantly affected by past control. NWOM intention was significantly lower in high past control (M=6.08, SD=1.27) than in low past control condition (M=6.49, SD=.85; $F(1, 121)=4.42$, $p<.05$). More data about this effect is presented in table 43.

Table 43 – Effect of past control on NWOM intention (study 2)

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*
Corrected Model	5.25	1	5.25	4.42	.038
Intercept	4850.35	1	4850.35	4081.32	.000
Past control	5.25	1	5.25	4.42	.038
Error	143.80	121	1.19		
Total	4994.44	123			
Corrected Total	149.05	122			

The effect of past control on NWOM intention was also fully mediated by external causal locus and other-focused anger. The confidence intervals for the indirect effect through external causal locus and other-focused anger did not include zero (ranging from -.22 to -.01). The direct effect became non-significant when considering both external locus and other-focused anger as mediators (c'=.01). The total effect was significant (c=-.21). The same logic from switch intention applies here: high past control leads to reduced external blame and anger toward the service provider which, in turn, lead to less intention to engage in NWOM. Figure 21 shows the indirect effect through external locus attribution and other-focused anger.

Figure 21 – Indirect effect of past control on NWOM intention (study 2)



* $p<.05$, ** $p<.01$, *** $p<.001$

Besides testing the effects of past control on emotions and behaviors, we also checked whether past control could influence other variables of the temporal model of perceived control: present control, future control, and future likelihood. The idea of investigating a potential effect of past control on other variables from the temporal model of perceived control comes from Frazier et al.'s (2001) suggestion of future investigation about the relationship between past and future control. The authors explain that these two forms of control might be related to each other. Therefore, we tested these and other possible relationships regarding past control. ANOVA revealed a positive effect of past control on future control. Participants in the high past control condition reported higher perceived future control (M=5.10) than participants in the low past control condition (M=4.57, F(1, 121)=8.48, p<.05). There was no significant effect of past control on perceived present control and future likelihood (p>.10). There were also other variables measured on this study which were not significantly affected by past control:

- Fear (F(1, 121)=.21, p=.65);
- Disappointment (F(1, 121)=.22. p=.64);
- Complaint intention (F(1, 121)=1.51, p=.22);

3.9.3 Discussion

According to the results of this experiment, the more a customer thinks s/he could have prevented a stressful service situation (i.e., the higher the past control), the less this customer blames the service provider (i.e., the lower the external locus attribution). Despite our effort on keeping external locus attribution constant – keeping the same rude treatment in both scenarios – individuals' perception that they could have prevented a stressful situation made them ascribe

less blame to the service provider. Although there was an expectation that past control would not affect external attribution – after all, a service provider was rude to a customer that was not rude to him and this situation seems so inappropriate – the effect that was found converges with results from Hui and Toffoli (2002) showing that the higher the perceived control, the lower the external causal attribution, and also with the significant negative correlation between past control and external locus attribution found in studies 1A, 1B, and 1C.

The effects of past control on regret, guilt, and self-focused anger were partially explained (i.e., complementary mediation) by external locus attribution, while the effect of past control on other-focused anger was fully explained (indirect-only or complete mediation). In sum, the higher the past control, the lower the external locus attribution and other-focused anger, and the higher the regret, guilt, and self-focused anger.

The effects of past control on repurchase, switch, and NWOM intentions were fully explained by external locus attribution and other-focused anger. The higher the past control, the lower the external locus attribution and other-focused anger, consequently reducing switch and NWOM intentions.

The fact that external locus attribution partially or completely mediates the effects of past control on emotions and behavioral intentions does not diminish the potential relevance of past control and the rest of the temporal model. In fact, it shows that past control has some influence over causal locus attribution, therefore, it is important to understand what the customer thinks about his/her role in the service failure to predict what the customer will think about the service provider's role. It may be possible for service providers to influence customer locus attribution by increasing customer perceived past control. Perceived control may be increased through its antecedents, such as choice and information (Skinner, 1996), which could be antecedents of past control as well. Therefore, providing the customer with adequate service options and information previous to the service execution may lead to higher customer perceived past control over a service failure. In turn, such high past control may lead customers to attribute less blame to service providers. Besides, the partial (complementary) mediations indicate that external locus attribution does not explain all the effect of past control on emotions. In other words, one cannot deeply understand and anticipate customers' reactions to service failure looking only to causal locus attribution because past control offer some insight to such reactions too. And finally, past control is just one part of the temporal model. Maybe other components of the temporal model of perceived control may as well interact with causal attributions and appraisals to explain customers' reactions.

3.10 GENERAL DISCUSSION

As failures are a reality in service industry and its consequences may be extremely harmful to customers and service providers, it is important to understand customers' emotional and behavioral reactions to service failures. This article represents an initial effort to incorporate the temporal model of perceived control in studies about service failure. The temporal dimension of perceived control has not been investigated in service research - neither the model developed by Frazier and colleagues nor other temporal models. The four studies reported in this paper show that the temporal model of perceived control helps to explain and predict customer emotional and behavioral reactions after a stressful service experience.

Not every emotion and behavior measured in this article was affected by the temporal model of perceived control. From the emotions and behaviors that were affected, regret, anger, guilt, repurchase, switch, and NWOM, were the ones more consistently related to the model because they were affected in study 2 and in at least one out of the three surveys previously described. So, the temporal model offers some significant results on its own, but it can also be used together with causal attributions and appraisals, increasing their explanatory power as shown in studies 1A, 1B, and 1C. It can also affect causal locus attribution as show in study 2.

If used alone, as a substitute of causal attributions, the temporal model changes the focus of service failure research from external to internal, investigating customers' perceived control rather than customers' attributions about the service provider. If used together with attributions or appraisals, the temporal model allows the investigation of customers' perceived role in a service failure no matter whether the failure was caused by the service provider. The model complements causal attributions and appraisals by asking whether customers: 1) had past control over the service failure, 2) have present control over their thoughts and emotions regarding the failure; 3) have future control over the failure, and 4) think the failure is likely to reoccur.

Although the temporal model of perceived control had some encouraging results in this article, it did not excel attributions and appraisals in every emotional and behavioral reactions here investigated. But it seems to be very helpful when used together with attributions and appraisals, increasing some emotions and behaviors variance explained. Thus, the temporal model should be used along with causal attributions and appraisals to complement both models and lead to higher understanding of customer reactions to a service failure.

3.10.1 Implications

Results have theoretical and managerial implications. From a theoretical perspective, it shows that the perceived control temporal model can be used in service failure research to better understand customers' emotional and behavioral reactions. It broadens the scope of service research as it enables to look at the role of customers' during and after service failures, something that has been overlooked in the area. It looks to customer perceived control in a temporal dimension (past, present, and future). Service and marketing research already adopt the concept of customer perceived control and its effect on causal attributions was already investigated (e.g., Hui & Toffoli, 2002). But studies have not been addressing the temporal dimension of perceived control. This article shows that such temporal dimension of perceived control affects customer reactions to service failures – like it affects individuals' reactions to stressful life events (as showed by Frazier and colleagues). Therefore, investigations about service failures can benefit from using such model.

From a managerial perspective, it shows that customer perceived control – something that service companies can manage – helps to predict customer reactions to a service failure. Service companies may increase customer perceived control – if they wish to do so – by providing antecedents of control to customers. Such antecedents could be information, predictability, choice, and decisions (Skinner, 1996). In other words, service providers may increase consumer perceived control by providing relevant information about the service process (e.g., which are the steps of the process and its total length), telling customers what to expect from the service outcome (e.g., how the service outcome will look like), and giving customers some options (e.g., letting them choose some of the service characteristics). Service providers may also increase customer perceived control by encouraging customer participation in service production/delivery (Chan et al., 2010). Knowing the different effects of perceived control on customers' reactions may help service companies to decide the most suitable moments to raise customer perceived control.

In view of the fact that the studies showed that the temporal dimension of perceived control matters when it comes to assessing customers' reactions to service failures, practitioners should keep such temporality in mind when planning to raise or lower customer perceived control. In other words, service providers may benefit from increasing/decreasing customers' perceived control before or after the service failure. For instance, according to the valence of the regression coefficients listed in section 3.9.8 (regressions conducted with the common

database), it may be helpful to increase past and present control and decrease future control in order to decrease customers' anger toward the service provider. Increasing past control requires increasing customers' perceived control prior to the service failure, while increasing (or decreasing) present and future control requires affecting customers' perceived control after the service failure. So, there are probably many antecedents of perceived control that may be managed by service providers before or during the service delivery (i.e., before the occurrence of the service failure) and during the service recovery (i.e., after the service failure).

At a first glance, increasing customers' past and present control while decreasing customers' future control seems like a good deal for service providers because it could lead to less NWOM according to the valence of the regression coefficients from section 3.9.8. Although regression results themselves do not show whether perceived control (cognition) affects behavior or whether it is the other way around, the literature suggests that behaviors are affected by cognitions and emotions (Weiner, 2000; Smith et al., 1993). Thus, it is interesting to notice that the best outcome for service providers does not come from empowering the customer whenever possible, otherwise increased future control should lead to less rather than more NWOM. Even though we can think of such theoretical and managerial implications, there are still many other investigations that could be done to create a solid knowledge about the temporal dimension of perceived control and its impact on customers' reactions to stressful service failures. Next section debates the limitations of the studies conducted in this chapter and suggests some future research.

3.10.2 Limitations and future research

As a first step to use the perceived control temporal model in service failure research, this research has limitations concerning the scope of its investigation. Although it tested the potential effects of the temporal model on several emotions and behaviors, there are other emotions (e.g., shame and anxiety) and behaviors (e.g., inertia) that could also be affected by the model. Each emotion leads to particular way(s) of coping with it, also leading to specific behaviors. For instance, regretful customers have different behavioral reactions when compared to disappointed ones (Zeelenberg & Pieters, 2004). This is a reason why it is relevant to understand whether and how the temporal model of perceived control could influence other

emotions. Future studies could scrutinize the effects of each component of the temporal model (i.e., past, present, future, and future likelihood) on different emotions.

Also, the temporal model of perceived control could be affecting (or being affected by) causal attributions and appraisals. For instance, there was a significant negative correlation between future control and external locus attribution in studies 1A and 1C ($p<.05$), and a significant positive correlation between present control and future expectancies appraisal in studies 1B and 1C ($p<.05$). Future studies could address the way the model relates to attributions, appraisals, or other customer cognitions.

Some of the components of the model seem uncorrelated to some attributions and appraisals. One example is the lack of significant correlation between future control and stability attribution in studies 1A, 1B, and 1C, suggesting that both cognitions work independently from each other. Even cases like this could generate interesting future researches. One could investigate what happens when a customer thinks the cause of a failure is permanent (stable and, therefore, likely to reoccur) but at the same time s/he thinks s/he can prevent the failure from happening again (future control). What could have a higher impact on customer switch intention: the fact that whatever caused the service failure has not been fixed yet or the fact that the customer will not be able to prevent the failure recurrence? In case stability is the one thing that matters the most, switch intention should be positively affected (higher switch intention). But in case perceived future control is more important than stability, switch intention could be positively affected (i.e., low future control leading to low switch intention) – according to the valence of regression coefficients from the common database – or unaffected, because customers who think they can prevent the failure from occurring again do not need to fear the failure reoccurrence. In other words, customers who think they can prevent a failure can keep on doing business with the same service provider because they know what to do to prevent the failure.

Besides affecting or interacting with causal attributions, the components of the perceived control temporal model could influence each other. Frazier et al. (2001) discuss whether past and future control could be related to each other without empirically investigating it. The authors use examples to show that past and future could be either related or unrelated to each other. They argue that a person who caused a car accident while talking on his or her cell phone could report a high level of both past and future control because this person may think he or she could have prevented this accident and will be able to prevent a similar one in the future. On the other hand, a person whose partner died from cancer may report a high level of past control, believing s/he could have prevented her/his partner's disease by making this

partner eat healthy food, but it is unlikely that high past control level would be associated with high future control level on this situation. Thus, future studies could examine whether and how past and future control (or past and present, future and present, etc.) relate to each other and how this could affect customer emotions and behaviors.

The temporal model of perceived control was used in the present chapter exactly the same way it was used by Frazier and colleagues (i.e., the same four components and 22 items). The model was developed to explain emotional and behavioral reactions to varied stressful life events. In order to use it in a more specific context such as service failures, one can adapt such model, using different components and items relevant to such context. For instance, a second type of perceived present control that could be investigated in the context of service failure is whether customers have any control over the failure right now, acting to correct or mitigate the consequences of the failure rather than simply trying to control their thoughts and emotions about it. For instance, in a situation similar to the one described in study 2, there are things customers can do when the mechanic is being rude (e.g., ask to talk to another person, tell the mechanic to calm down, leave the repair shop, etc.) or after (e.g., complain to the manager, complain to the mechanic, etc.) that refer neither to controlling their emotions and thoughts nor preventing the recurrence of the event. Rather, such actions refer to having control over the situation in the present, changing the failure course of action or mitigating its consequences.

4 CO-PRODUCTION AND THE CAUSAL LOCUS ATTRIBUTION

Imagine that you went to a gym aiming to lose some weight. You and your personal trainer established a workout programme together to achieve this objective. After some months, you are not satisfied with the outcome of your workout programme. Who is to blame? You, who helped your personal trainer to set up the workout programme, or your personal trainer, the service provider who should have advised you correctly? This causal locus attribution (i.e., blaming the service provider, yourself, or both for a failure) in contexts in which customers participate in the production of a service for themselves is a key element of service management because co-production – customer participation in the production of an outcome that will be consumed (Etgar, 2008; Lusch & Vargo, 2006) – is becoming increasingly common (Atakan, Bagozzi, & Yoon, 2014), and service failures are a reality in many service encounters (Joireman et al., 2013). Despite such importance, there are few studies about the effect of co-production on causal locus attribution, and these studies have conflicting results. Also, knowledge about failed co-produced services is lacking (Heidenreich et al., 2015). This research aims to partly fill this gap by analysing failed results of co-production, their impact on customers' causal locus attribution, emotional reactions (i.e., regret, disappointment), and dissatisfaction. Regret and disappointment were chosen among several negative emotions because they are the two emotions most closely related to decision making (Van Dijk & Zeelenberg, 2002). Besides, these two emotions have been addressed as antecedents of customer dissatisfaction in the context of failed services (Zeelenberg & Pieters, 1999, 2004).

Previous research has demonstrated the positive effects of co-production as a service management strategy, such as higher customer satisfaction, perceived control, and perceived quality (Chan et al., 2010; Golder, Mitra, & Moorman, 2012; Hunt, Geiger-Oneto, & Varca, 2012). Although co-production has been associated with such positive outcomes, co-produced services may have failures and lead to customer dissatisfaction. According to Heidenreich et al. (2015), research on the consequences of failed co-produced services is scarce. Service management theory and practice can be improved by studying not only successful co-production cases but also what happens when co-production results in failure.

When approaching service failures, causal locus attribution seems imperative for explaining customers' reactions. Few papers have addressed the relationship between co-production and causal locus attribution (i.e., whether the cause of a failure is perceived as internal – due to the customer – or external – due to the service provider or other circumstances)

in a failed co-produced service (e.g., Heidenreich et al., 2015; Jong-Kuk et al., 2010; Yen et al., 2004). Some of these studies show that high participation leads to more external attributions (Jong-Kuk et al., 2010; Yen et al., 2004). These findings are in line with the self-serving attributional bias literature (hereafter referred to as self-serving bias), which refers to a tendency for individuals to attribute success to internal causes (i.e., themselves) and failures to external causes (i.e., other people or circumstances) (Mezulis, Abramson, Hyde, & Hankin, 2004; Weiner, 1985). According to this bias, one could expect more external attributions for failed co-produced services. In contrast, Heidenreich et al. (2015) found that high participation leads to more internal attributions. Indeed, evidence suggests that co-production is positively related to customer perceived control (Chan et al., 2010), which in turn is positively related to internal causal attributions (Hui & Toffoli, 2002). Consequently, one could expect more internal attributions for failed co-produced services. In short, despite such important previous research, the literature on the subject is conflicting and inconclusive.

However, sometimes it may be hard to attribute a failure to the service provider or the customer, because people may be uncertain about causal attributions (Choi & Mattila, 2008; Weary & Jacobson, 1997). As far as we know, none of the previous research about causal locus attribution in failed co-produced services have addressed causal uncertainty. And there are two reasons why addressing causal uncertainty in failed co-produced services is relevant: First, two parties (customer and service provider) had participated in the creation of the failed service, so both could have contributed to cause the failure. Not one party or the other, but both could have made decisions that together led to the undesirable outcome. Therefore, it is possible to have more than one cause for the failure, and the presence of more than one cause can lead to causal uncertainty (Barrowclough & Hooley, 2003). Second, causal uncertainty may lead to reduced emotional intensity (Barrowclough & Hooley, 2003). Thus, it would be interesting to understand whether causal uncertainty could reduce customer regret, disappointment, and dissatisfaction in case of failed co-produced services.

The present research differs from the few previous investigations regarding the influence of co-production on causal locus attribution by examining the effects of uncertain causal locus attribution (i.e., when it is hard to tell who is the one to blame). More specifically, the purpose of this research is threefold: 1) to investigate the influence of co-production on customers' causal locus attribution for failed co-produced services, adding to the scarce amount of empirical studies on the subject; 2) to investigate customers' dissatisfaction and emotional reactions to such failures, particularly regret and disappointment, which depict internal and external attributions, respectively; and 3) to explore how people react when causal locus

attribution is uncertain. Failed co-produced services in which the causal locus is uncertain is investigated and compared with situations of internal and external causal attributions.

This paper is structured as follows. First, the theoretical framework is presented, addressing co-production, causal locus attributions, regret, disappointment, and dissatisfaction. Next, two experimental studies that test the hypotheses are described. Finally, there is a general discussion, together with theoretical and managerial implications, limitations, and suggestions for future studies.

4.1 THEORETICAL BACKGROUND

4.1.1 Co-production

The terms "co-production" and "co-creation of value" are sometimes used interchangeably. We adopt the distinction made by Lusch and Vargo (2006), endorsed by Etgar (2008), that co-production refers to customer participation in the creation of the core offering, while co-creation of value refers to customer creation of value during the consumption stage. This chapter focuses on service co-production only: customer participation in service specification and delivery (Yen et al., 2004). In a co-production situation, at least two parties – the service provider and the customer – collaborate in the generation of an outcome that can be satisfactory or not.

One of the main characteristics of services is the inseparability of production and consumption (Parasuraman et al., 1985). Thus, customers usually are present during the service production stage. This may raise the question of whether every service involves some level of co-production. One could wrongly assume that customers are always present during the production and consumption of services and that customers are always services co-producers. In that case, one could think we should be exploring the effects of low versus high co-production levels rather than the effects of co-production versus no co-production. Indeed, there are papers investigating the effects of co-production levels (e.g., Heidenreich et al., 2015; Jong-Kuk et al., 2010; Yen et al., 2004).

But this inseparability characteristic has been challenged, and there are some services in which production and consumption are not simultaneous (Lovelock & Gummesson, 2004).

One example of separable services refer to services delivered to physical possessions, in which the presence of the customer is not necessary, such as equipment maintenance (Lovelock & Gummesson, 2004). Thus, customers do not need to be present during the service delivery or participate of it. And even when services involve customers' presence, such as dinner at a restaurant, customers may either participate in the creation of the service – by ordering an item from the menu and specifying its characteristics (e.g., rare steak, no pepper) – or not. Bendapudi and Leone (2003) manipulated co-production versus no co-production in service contexts (e.g., a customer drafting and sending a letter – with the assistance of a lawyer – versus a lawyer drafting and sending a letter on behalf of a customer). So, we see no problem on comparing co-production with no co-production in service contexts.

4.1.2 Co-production and causal locus attributions

Attribution emerges when the customer compares performance versus expectations and evaluates such outcomes (Weiner, 2000). Sometimes, these outcomes are negative, which is obviously not desired by neither the customer nor the service provider. The search for attribution is more frequent after failures – when customers do not obtain a desired outcome (Abramson et al., 1978) – than after successful situations (Weiner, 2000). One of the attributions a customer may formulate after a failure refers to the causal locus – attributing the cause of the failure to oneself, the company or the circumstances (Folkes, 1984, Weiner, 2000).

So far, the literature on whether customers who co-produce will make more external (vs. internal) attributions after service failures is still inconclusive. One research stream states that a self-serving bias will occur, that is, the tendency for individuals to attribute success to internal causes (i.e., themselves) and failures to external causes (i.e., other people or circumstances) (Mezulis et al., 2004; Weiner, 1985). However, another research stream states that co-production leads to more perceived control (Chan et al., 2010), which should lead to more internal attributions for failures (Heidenreich et al., 2015; Hui & Toffoli, 2002). In short, there are different approaches in the literature suggesting that co-production may either increase or decrease the self-serving bias (Yen et al., 2004).

Jong-Kuk et al. (2010) and Yen et al. (2004) show that co-production may increase external attributions and, therefore, the self-serving bias. According to these authors, customers' level of participation during co-production may explain the impact on causal

attributions. Higher customer participation leads to more external attribution than lower customer participation (i.e., higher customer participation increases the self-serving bias).

Jong-Kuk et al. (2010) and Yen et al. (2004) use equity theory (Walster, Berscheid, & Walster, 1973) to formulate their hypotheses and justify their results. The authors' rationale is that high participation implies high inputs from the customer (e.g., information, effort, and other inputs). The discrepancy between customers' high inputs and service providers' low output (i.e., failed service) will generate customers' desire to protect their self-esteem, which will make them attribute blame to the service provider rather than blaming themselves (Jong-Kuk et al., 2010; Yen et al., 2004).

The psychology literature may also offer some insight about the positive relationship between co-production and self-serving bias. According to Campbell and Sedikides (1999), factors that pose a threat to the self usually lead to self-serving bias to protect the self against such threat. For instance, these authors argue that a person who plays an actor role will experience more self-threat and more self-serving bias than a person who plays an observer role. One may argue that, when co-producing, customers play more the role of actor than observer, which suggests that co-producers will face a higher self-threat compared to non-co-producers, which in turn should lead to higher self-serving bias.

However, there are conflicting findings regarding co-production increasing internal attributions and, therefore, reducing the self-serving bias. For example, Heidenreich et al. (2015) found evidence that a high level of co-production leads to more internal attributions than a lower level of co-production, which is the opposite result found by Jong-Kuk et al. (2010) and Yen et al. (2004). The rationale behind this result is that high level of co-production (i.e., high participation) means high customer involvement, which in turn is positively related to responsibility. So, customers with high level of co-production feel more responsible and make more internal attributions than customers with low level of co-production (Heidenreich et al., 2015).

And as far as satisfaction is concerned, Bendapudi and Leone (2003) have shown that there is no difference in the resulting dissatisfaction with the company between customers who co-produced and those who did not. According to Bendapudi and Leone (2003), differences appear only when customers have the option to co-produce. Giving customers this option leads to lower dissatisfaction with the company. This result suggests that co-production, associated with the option given to the customer to participate in the process, may reduce the self-serving bias (i.e., increase internal attribution) in dissatisfying services.

Other evidence suggesting that co-production may increase internal attribution is the higher perceived control level among customers who co-produce (Chan et al., 2010; Pacheco et al., 2013). Customers with higher perceived control levels tend to make more internal attributions than external attributions (Hui & Toffoli, 2002). In addition to being an antecedent of perceived control, co-production may be seen as an actual type of control, i.e., behavioural control, which refers to an action that may influence or modify an event (Averill, 1973). Control and responsibility are closely related (Weiner, 1995). The more people perceive having control over their acts, the more responsible they feel (Caouette et al., 2012). Lack of control, in turn, increases attributional activity (Pittman & Pittman, 1980), suggesting that the lower the perceived control, the higher the search for someone to blame for a failure.

In an effort to understand which perspective holds for failed co-produced services, this paper relies on such control and responsibility literature and empirical evidence to expect more internal attributions for failed co-produced services. Previous results linking co-production to higher external attribution may be due to factors other than co-production itself, such as effort and commitment. For instance, Yen et al. (2004) describe a scenario with a level of co-production in which customers did their best while co-producing, which would consequently lead to higher external attribution for a failure (i.e., if I did everything right, somebody else must have done something wrong). However, co-production is not necessarily related to highly committed customers putting all their effort into it. When levels of effort and commitment during co-production are not stressed, customers who co-produce may see themselves as partly responsible for the service outcome (Hess et al., 2007), consequently perceiving less service provider control over such outcome. Hence, the following hypothesis is formulated:

H1: Customers who co-produce (vs. do not co-produce) tend to make more internal than external attributions for a service failure.

Rather than blaming the service provider or themselves, sometimes customers may be uncertain about causal attributions (Choi & Mattila, 2008; Weary & Jacobson, 1997). In general, uncertainty is caused by a lack of knowledge (Volz, Schubotz, & Von Cramon, 2004). Causal uncertainty may be consequence of chronic individual differences but it may also be produced by the situation (Weary & Jacobson, 1997). Co-production may enhance the possibility of such causal locus uncertainty because it brings customers into the service production process, making customer and service provider jointly work on it. So, both customer and service provider could be responsible for what they have jointly produced. And situations

are not always so straightforward to identify only one responsible. Sometimes, both parties may have some responsibility over the results. There may be more than one cause for a failure too, and the presence of more than one cause can lead to causal uncertainty (Barrowclough & Hooley, 2003).

Adding causal locus uncertainty to the investigation of internal and external attributions may help to better understand customers' emotional reactions in face of failed co-produced services. This way, it is possible to comprehend customer experienced regret, disappointment, and dissatisfaction when the fault is on the company, customer, and when it is hard to determine (uncertain). Causal uncertainty may lead to reduced emotional intensity (Barrowclough & Hooley, 2003), mitigating customers' negative reactions towards the service provider (Choi & Mattila, 2008). Therefore, it is logical to expect reduced levels of negative emotions from customers with causal locus uncertainty (vs. internal or external causal locus attribution). However, this result cannot be taken for granted, since we did not find papers addressing locus uncertainty in failed co-produced services. If co-production leads to more internal attribution as stated by H1, then locus uncertainty could lead to emotional reactions similar to those of internal locus attribution. We do not formulate hypothesis about the effects of uncertain causal locus, but we do investigate how locus uncertainty affects regret, disappointment, and dissatisfaction in failed co-produced services. The next section addresses the expected effects of internal and external causal attributions on regret, disappointment, and dissatisfaction.

4.1.3 Regret, disappointment, and dissatisfaction

The comparison between obtained and expected results is known as counterfactual thinking, and it affects customers' emotional reactions (Zeelenberg et al., 1998). Regret emerges from a comparison between the result and the outcome that could have been obtained if the customer had done something different. Disappointment emerges from a comparison between the obtained result and the outcome that could have been obtained if an external circumstance (e.g., the service provider's actions) had been different (Zeelenberg et al., 1998). Based on counterfactual thinking theory (Zeelenberg & Pieters, 2004), regret may emerge when the causal locus of a failure is on the customer. Conversely, disappointment may emerge when the causal locus is on the company. In line with that, it is expected that customers will experience more regret when they attribute the cause of a failed co-produced service to

themselves and more disappointment when they attribute the cause of a failed co-produced service to the service provider.

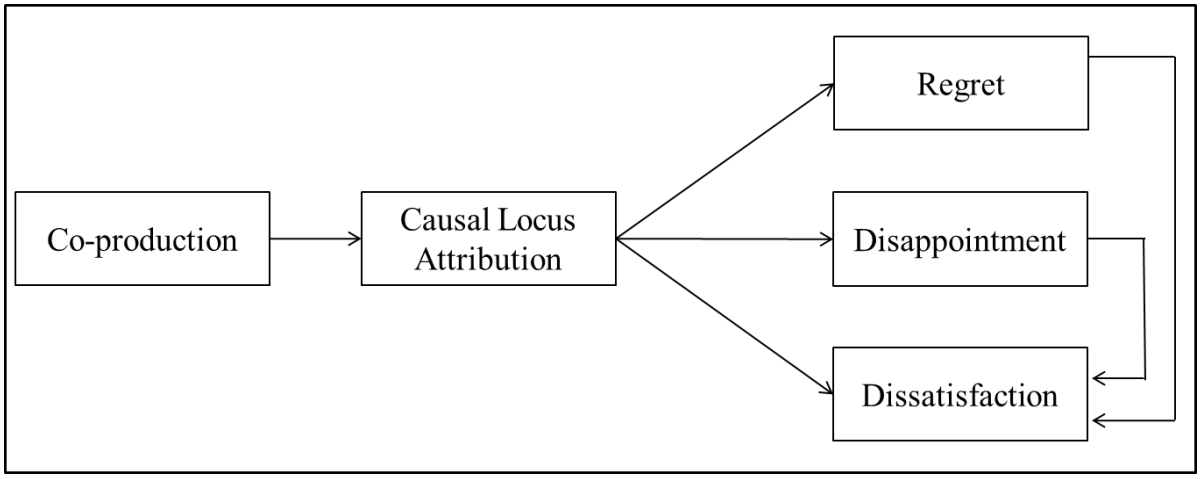
Although frustration and sadness – proxies for dissatisfaction – may be seen as more outcome-dependent (i.e., associated with failure) than attribution-dependent (Weiner, 1985), there is evidence pointing to a direct effect of causal attribution on (dis)satisfaction. According to Choi and Mattila (2008), customers report lower satisfaction level after a service failure when they perceive that the service provider could have prevented the failure but did not do so (i.e., external controllable cause), compared to when the customer is partly responsible for the failure (i.e., internal and controllable cause). This suggests a positive effect of external attribution on dissatisfaction. Besides, Zeelenberg and Pieters (2004) found that both regret and disappointment are important determinants of dissatisfaction. Together, both emotions explained 88% of dissatisfaction variance in their study – disappointment accounted for 60% of such explained variance. This high association between dissatisfaction and disappointment is an extra sign of a potential positive effect of external attribution on dissatisfaction. Therefore, the following hypothesis is formulated:

H2: In case of failed services, the higher the customer internal attribution, (a) the higher the regret, (b) the lower the disappointment, and (c) the lower the dissatisfaction.

In short, it is expected that, in case of failed services, co-production will affect causal locus attribution, such that customers who co-produce will make more internal than external attributions, as opposed to customers who do not co-produce (H1). It is also expected that customers who co-produce will experience more regret and less disappointment and dissatisfaction than customers who do not co-produce because regret is associated with internal attributions, whereas disappointment and dissatisfaction are associated with external attributions (Choi & Mattila, 2008; Zeelenberg et al., 1998). And when co-production is kept constant but attributions vary, customers who co-produce and make internal attributions will tend to experience more regret and less disappointment and dissatisfaction than customers who co-produce and make external attributions (H2).

Figure 22 shows the theoretical framework that integrates co-production, causal locus attributions, regret, and disappointment.

Figure 22 – Theoretical framework



Next sections describe the methodological procedure aimed at testing the two hypotheses. Two experiments were conducted. Study 1 is aimed at overcoming conflicting results of previous research about the influence of co-production on customer causal locus attributions for failed services. Study 2 extends the results of study 1 by investigating the effects of causal locus attribution on regret, disappointment, and dissatisfaction while exploring how people react when causal locus attribution is uncertain. Together, the studies test the two hypotheses under different types of services (restaurant, gym, and online purchase of a t-shirt) to strengthen the external validity of the results. The different service contexts allow the observation of co-production and causal locus attribution effects on services that vary in length (a restaurant service is delivered the same day it is ordered while a gym service is delivered a little bit each day), although such variable was not controlled for.

4.2 STUDY 1

The purpose of study 1 was to test the hypotheses by manipulating co-production (co-production and no co-production) and measuring causal locus attributions, regret, and disappointment. The final sample was 118 people (53% women, M_{age}=37.25, *SD*=13.72) after deleting 13 respondents with incorrect answer to the attention check. The attention check was a question in which participants were told to choose the option “others” as the answer. Participants were recruited via Mechanical Turk.

4.2.1 Procedure

Each participant was randomly assigned to two co-production or two no co-production scenarios to test two different service contexts (restaurant and gym). First they read a text about a meal that was worse than expected (restaurant context) and answered questions about it. Then, they read a text about workout programme results that were worse than expected (gym scenario). The four scenarios are presented in table 44.

Table 44 – Co-production conditions for restaurant and gym contexts

	Co-production manipulation	**No co-production manipulation**
Restaurant context	Imagine that you decided to go to a restaurant in order to have dinner. In the restaurant, you are able to create a special meal the way you want (i.e., a customized meal) instead of choosing a pre-existing option from the menu. You decided to try a meal you have never tasted before. So, you tell the waiter which pasta you want, the pasta's sauce, and the side dish you chose. You even ask him to include some ingredients to the sauce that were not in the original recipe. After your meal is served, you get the feeling that it was worse than you expected.	Imagine that you decided to go to a restaurant in order to have dinner. In the restaurant, you are able to order your meal by choosing a pre-existing option from the menu, but you cannot create a special meal the way you want (a customized meal). So, you tell the waiter which option you chose. It is pasta with sauce and a side dish. You cannot include ingredients to the sauce that were not in the original recipe. After your meal is served, you get the feeling that it was worse than you expected.
Gym context	Imagine that you joined a gym to lose some weight. You actively participated in the design of your workout programme with your personal trainer. You chose the exercises you would do and the ones you wouldn't. After three months, the results were worse than you expected.	Imagine that you joined a gym to lose some weight. You did not participate in the design of your workout programme. Your personal trainer chose for you the exercises you would do and the ones you wouldn't. After three months, the results were worse than you expected.

4.2.2 Measures

Co-production manipulation check consisted of one item measuring the extent to which participants agree they have actively participated in the creation of the meal (restaurant context) and in the design of the workout programme (gym context) on a 7-point scale. Causal locus attribution was measured with a bipolar item asking who was the responsible for the fact that the meal/workout results were worse than expected (1 = the restaurant/personal trainer, 7 = myself).

Both regret and disappointment were measured by 7-point items adapted from Marcatto and Ferrante (2008): "I wish I had chosen differently" for regret and "I wish the other

people/factors involved that were beyond my control had led me to a different outcome" for disappointment. Dissatisfaction was measure with one item on a 7-point scale. Table 45 shows all these measures in the same order they were asked in the questionnaire.

Table 45 – Measures from study 1

Name of the variable, source	Item(s)
Co-production manipulation check	I have actively participated in the creation of the meal I ordered in this restaurant
Causal locus attribution	In the situation just described, who was the responsible for the fact that your meal was worse than you expected (The restaurant / Myself)
Regret, Marcatto and Ferrante (2008)	I wish I had made a different choice
Disappointment, Marcatto and Ferrante (2008)	I wish other people/factors that were beyond my control had led to a different outcome
Dissatisfaction	In general, how dissatisfied were you with this restaurant

On the debriefing, participants were asked to guess the purpose of the investigation. There was no evidence of demand artifacts since participants did not identify the purpose of the investigation. Scenarios were reported as credible for both restaurant (M=5.57, 1 = impossible to occur in real life, 7 = possible to occur in real life) and gym (M=5.64). ANOVA showed that scenarios with and without co-production did not vary regarding their credibility (p_{rest}=.96; p_{gym}=.44).

4.2.3 Results

ANOVA revealed that manipulations were effective in both service contexts. Participants in the co-production scenario reported higher levels of participation in the creation of their meal (F(1, 116)=254.78, p<.001, M=6.28, SD=1.22) and workout programme (F(1, 116)=314.85, p<.001, M=6.35, SD=.83) than participants in the no co-production scenarios in both restaurant (M=2.15, SD=1.56) and gym contexts (M=2.02, SD=1.66).

Consistent with H1, customers who co-produced reported more internal attribution for failures than customers who did not co-produce. For the restaurant context, participants in the no co-production scenario attributed the blame more to the restaurant (F(1, 116)=57.29, p<.001, M=3.02, SD=1.89) whereas participants in the co-production scenario attributed the blame more to themselves (M=5.46, SD=1.58). For the gym context, participants in the no co-production

scenario also attributed the blame more to the service provider ($F(1, 116)=33.85$, $p<.001$, $M=3.39$, $SD=2.12$) than participants in the co-production scenario ($M=5.37$, $SD=1.50$).

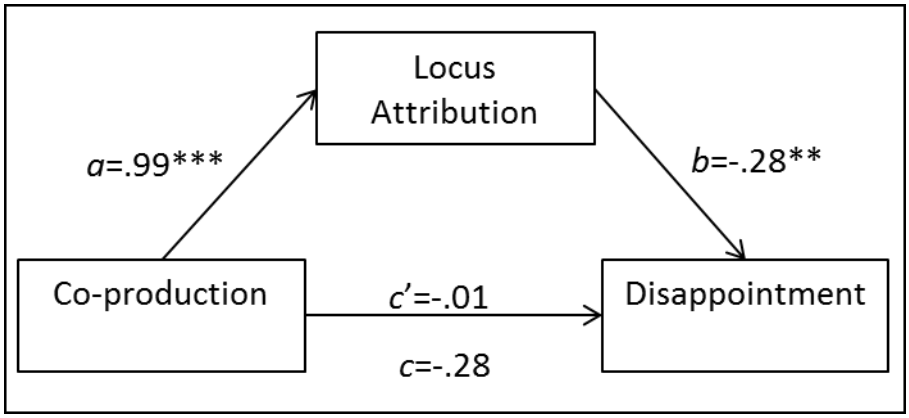
H2a stated that the higher the internal attribution, the higher the customer regret. There was no support for this hypothesis because neither co-production ($p>.10$ for both service contexts) nor locus attribution affected regret ($p>.10$ for both service contexts).

Consistent with H2b, customers who reported higher internal attribution (i.e., customers who co-produced) reported lower disappointment. The effect of co-production on disappointment was significant for the restaurant context ($p<.001$) and marginally significant for the gym context ($p<.10$). For the restaurant context, participants in the co-production scenario reported lower disappointment ($F(1, 116)=10.74$, $p<.001$, $M=4.53$, $SD=1.77$) than participants in the no co-production scenario ($M=5.44$, $SD=1.23$). For the gym context, disappointment level was slightly lower for participants in the co-production scenario ($F(1, 116)=3.00$, $p=.09$, $M=4.68$, $SD=1.78$) than for participants in the no co-production scenario ($M=5.25$, $SD=1.74$).

Regression analyses showed significant effect of locus attribution on disappointment for both the restaurant ($R^2=.11$, $\beta=-.34$, $t=-3.87$, $p<.001$) and gym contexts ($R^2=.11$, $\beta=-.33$, $t=-3.71$, $p<.001$). The negative valence of the t values indicates that the more internal the attribution, the lower the disappointment. This result provides further support to H2b.

To test whether locus mediated the relationship between co-production and disappointment, it was conducted analysis with model 4 of PROCESS (Hayes, 2013) using 5,000 bootstrap samples. There was no sign of mediation for the restaurant context because the confidence interval for the indirect effect included zero (from -.48 to .01). But there was sign of mediation for the gym context (the confidence interval for the indirect effect did not include zero: from -.47 to -.09). For the gym context, participants who co-produced reported more internal attribution ($a=.99$), which in turn led to less disappointment ($b=-.28$). The direct effect of co-production on disappointment was no significant ($c'=-.01$, $p=.96$). These results point to a complete or indirect-only mediation (Zhao et al., 2010). Figure 23 shows results from the mediation analysis for the gym context.

Figure 23 – Direct and indirect effect of co-production on disappointment for the gym context



* $p<.05$, ** $p<.01$, *** $p<.001$.

Co-production was also associated with lower dissatisfaction levels. For the restaurant context, participants in the co-production scenario reported lower dissatisfaction ($F(1, 116)=28.84$, $p<.001$, $M=4.23$, $SD=1.70$) than participants in the no co-production scenario ($M=5.72$, $SD=1.31$). Similarly, for the gym context, participants in the co-production scenario reported lower dissatisfaction ($F(1, 116)=24.97$, $p<.001$, $M=4.40$, $SD=1.75$) than participants in the no co-production scenario ($M=5.79$, $SD=1.23$).

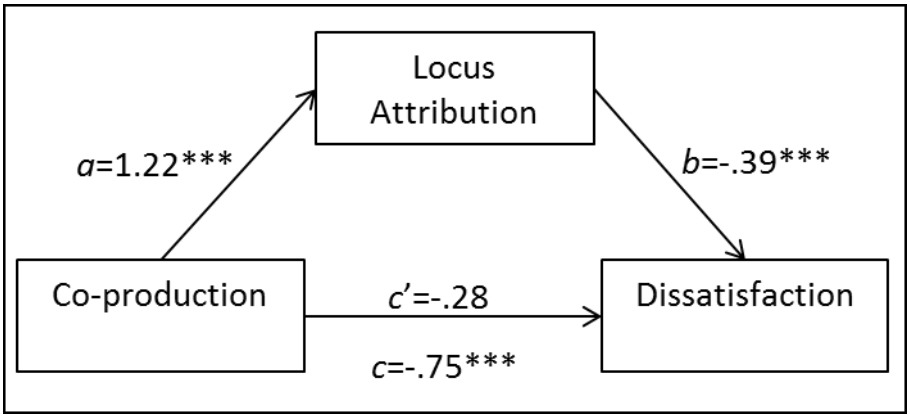
For the restaurant context, regression analyses showed significant effects of locus attribution ($R^2=.34$, $\beta=.-.58$, $t=-7.73$, $p<.001$) and disappointment ($R^2=.16$, $\beta=.40$, $t=4.74$, $p<.001$) on dissatisfaction. No significant effect of regret on dissatisfaction though ($p=.56$). For the gym context, there was significant effects of locus attribution ($R^2=.15$, $\beta=-.39$, $t=-4.52$, $p<.001$) and disappointment ($R^2=.07$, $\beta=.26$, $t=2.87$, $p<.01$) on dissatisfaction and marginally significant effect of regret on dissatisfaction ($R^2=.03$, $\beta=.17$, $t=1.81$, $p=.07$).

Using model 6 of PROCESS (Hayes, 2013), we tested whether locus attribution and disappointment[12] mediated the effect of co-production on dissatisfaction. This model tests mediators operating in serial (i.e., co-production -> locus -> disappointment -> dissatisfaction) and also provides results for one mediator at a time (i.e., co-production -> locus -> dissatisfaction / co-production -> disappointment -> dissatisfaction). For both the restaurant and gym contexts, only the confidence interval for locus as the single mediator did not include zero (from -.64 to -.21 and from -.33 to -.003, respectively).

[12] Regret was not tested as a mediator because there was no effect of co-production on regret.

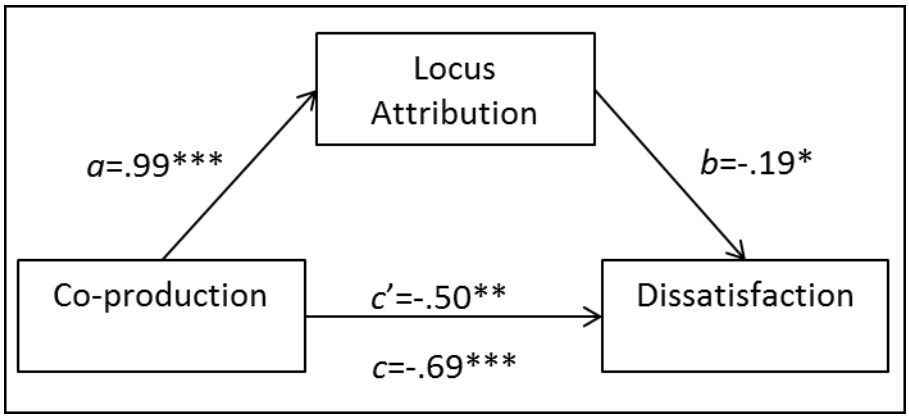
Because there was no sign of disappointment as a mediator, we repeated the mediation analysis using only locus attribution as a mediator and using model 4 of PROCESS. For the restaurant context, participants who co-produced reported more internal attribution (*a*=1.22), which in turn led to less dissatisfaction (*b*=-.39). The confidence interval for the indirect effect (*ab*=-.47) based on 5,000 bootstrap samples did not include zero (-.70 to -.27). The direct effect of co-production on dissatisfaction was only marginally significant (*c*'=-.28, *p*=.07). For the gym context, the effect of co-production on locus attribution (*a*=.99) and the effect of locus attribution on dissatisfaction (*b*=-.19) kept the same direction from the restaurant context. The confidence interval for the indirect effect (*ab*=-.19) did not include zero (-.36 to -.04). The direct effect of co-production on dissatisfaction was significant (*c*'=-.50, *p*=.001). These results point to a complementary mediation (Zhao et al., 2010), which means that causal locus is a mediator but other variable(s) may also be mediating the effect of co-production on dissatisfaction. Figures 24 and 25 show the mediation data for the restaurant and gym contexts, respectively.

Figure 24 – Direct and indirect effect of co-production on dissatisfaction for the restaurant context



* *p*<.05, ** *p*<.01, *** *p*<.001.

Figure 25 – Direct and indirect effect of co-production on dissatisfaction for the gym context



* *p*<.05, ** *p*<.01, *** *p*<.001.

Figures 26 (restaurant context) and 27 (gym context) show levels of regret, disappointment, and dissatisfaction for co-production and no co-production conditions.

Figure 26 – Customer regret, disappointment, and dissatisfaction for the restaurant context

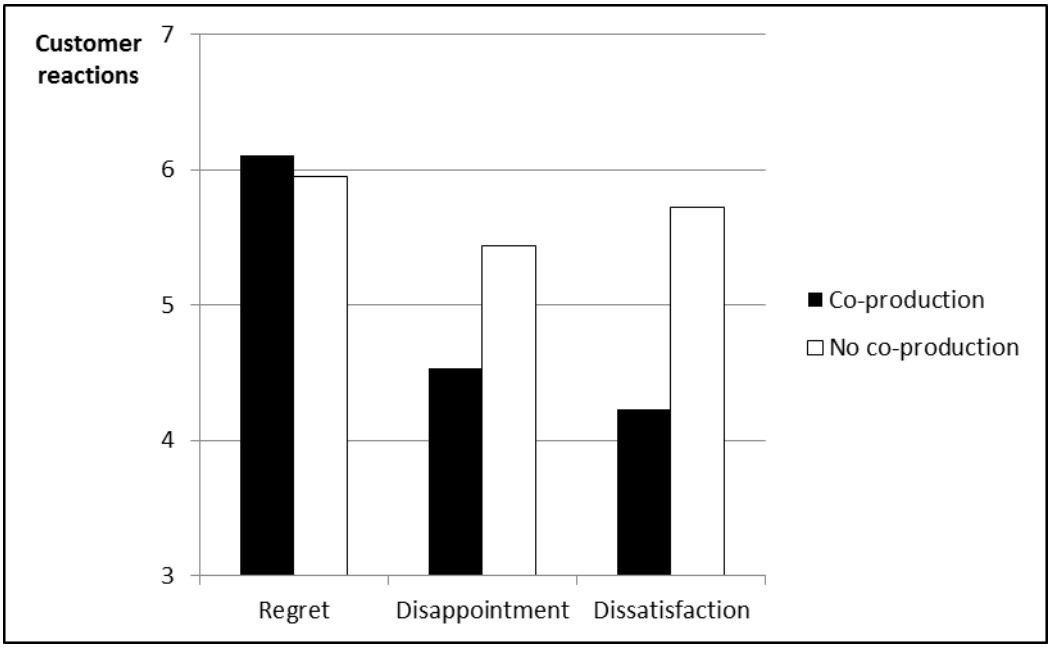
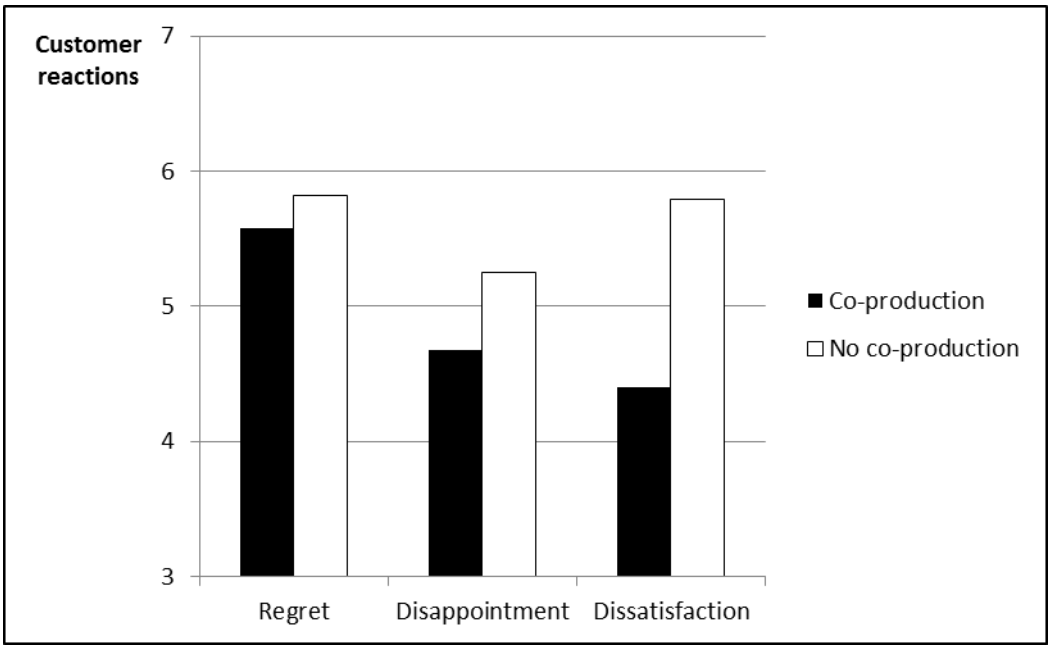


Figure 27 – Customer regret, disappointment, and dissatisfaction for the gym context



4.2.4 Discussion

Results from two different service contexts (gym and restaurant) suggest that co-production is positively associated with internal attributions for a service failure. These results are in line with results from Heidenreich et al. (2015), but contradict findings from Jong-Kuk et al. (2010) and Yen et al. (2004). Results from both service contexts (gym and restaurant) are consistent with indications that co-production is positively related to perceived control (Chan et al., 2010; Pacheco et al., 2013), which in turn is positively related to internal attributions (Hui & Toffoli, 2002), and that perceived control and responsibility are closely related (Weiner, 1995).

Results of this first study show that failed co-produced services may have more beneficial consequences for the service provider than failed services that were not co-produced. When customers participate in the service production and the outcome is worse than expected, customers tend to attribute at least part of the blame to themselves, feel less dissatisfied and disappointed with the service provider than customers who did not participate. Causal locus attribution – as a complementary mediator – helps to explain the effect of co-production on customer dissatisfaction. Co-production and the increased internal attribution derived from co-production did not make participants feel more regretful. These results suggest that co-production may decrease customer negative emotional reactions toward the service provider without necessarily increasing customer self-focused negative emotional reactions.

So far, the results show that co-production has a bright side even when services fail. Thus, co-production may be instigated by service providers that seek to reduce customer disappointment and dissatisfaction. In order to further investigate the consequences of failed co-produced services – the dark side of co-production – study 2 examines customer regret, disappointment, and dissatisfaction in a failed co-produced service with different causal locus attributions. For this purpose, co-production is kept constant while only causal locus is manipulated. This enables an investigation of consequences of failed co-produced services from a different perspective.

4.3 STUDY 2

This study consisted in a single-factor[13] between-subjects experiment. It was conducted in the context of an online service that allows customers to co-produce a T-shirt. Causal locus was manipulated in a way that the fault was on the company (company's locus), on the customer (customer's locus), or uncertain (uncertain locus). The final sample consisted of 129 people (47% women, M_{age}=30.86, SD=10.06) after deleting 15 respondents with incorrect answer to the attention check (same question from study 1). Participants were recruited via Mechanical Turk and randomly assigned to one of the three conditions of the study.

4.3.1 Procedure

Participants were told to read a text and imagine themselves in a scenario that involved the co-production of a T-shirt on a company's website, the design of the artwork to be printed in the T-shirt, and also the choice of the T-shirt's size and colors. The scenario stated that the co-produced T-shirt delivered at their homes was worse than expected. Then, participants allocated to the company's locus scenario read the following text: "So, you think it was the company's fault, since they made some changes in the artwork you designed". Participants allocated to the customer's locus scenario read the text: "So, you think it was your fault, since you designed an artwork that did not look well on a T-shirt". Finally, participants of the uncertain locus scenario read the text: "You do not know whose fault it was, because you do not remember whether you designed the artwork that way or the company made some changes on it".

[13] In a pilot study, we tried to conduct an experiment with a 2 (co-production: yes and no) x 3 (causal locus attribution: customer, company, and uncertain) factorial design. But co-production manipulation affected causal locus attribution (in the same direction predicted by H1 and found in the results of study 1). Because one manipulation should not affect the other and we had no reason to believe we could solve this issue – according to previous research, co-production really affects causal locus attribution – we decided to run a single factor study to be able to compare the effects of different causal locus attributions (including uncertain locus) on customers' emotional reactions, keeping co-production constant.

Scenarios were pre-tested via Mechanical Turk to check for manipulations efficacy and demand artifacts. Manipulations were effective and there was no evidence of demand artifacts since that participants could not correctly guess the purpose of the investigation. Scenarios were reported as credible by participants from the final sample (M=6.28, SD=.98, 1 = impossible to occur in real life, 7 = possible to occur in real life) with no differences among the experimental conditions (F(2, 126)=.45, p=.64).

4.3.2 Measures

Table 46 shows the measures adopted in study 2 in the same order they were asked in the questionnaire.

Table 46 – Measures from study 2

Name of the variable, source	Item(s)
Co-production manipulation check	I have helped to design the T-shirt I have bought
Internal locus attribution manipulation check	The unpleasant result was not at all caused by me / The unpleasant result was very much caused by me
External locus attribution manipulation check	The unpleasant result was not at all caused by the company / The unpleasant result was very much caused by the company
Uncertain locus attribution manipulation check	I know for sure the cause of the result / I do not know for sure the cause of the result
Regret	Same item from study 1
Disappointment	Same item from study 1
Dissatisfaction	Same item from study 1

4.3.3 Results

Causal locus manipulation was effective. Participants in the company's locus scenario reported higher company's locus attribution (F(2, 126)=45.89, p<.001, M=5.65, SD=1.25) than participants in customer's locus (M=2.86, SD=1.57, p<.001) and uncertain locus scenarios (M=4.15, SD=1.29, p<.001). Participants in the customer's locus scenario reported higher customer's locus attribution (F(2, 126)=55.36, p<.001, M=5.63, SD=1.51) than participants in the company's locus (M=2.57, SD=1.26, p<.001) and uncertain locus scenarios (M=4.05, SD=1.34, p<.001). Finally, participants in the uncertain locus scenario reported higher locus

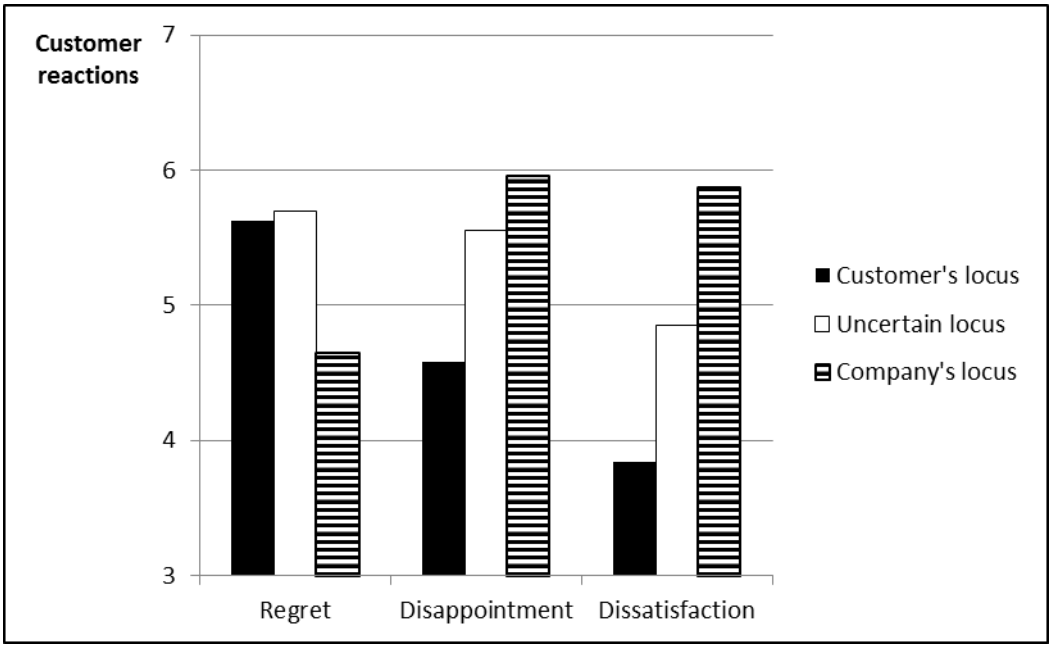
uncertainty ($F(2, 126)=24.85$, $p<.001$, $M=5.53$, $SD=1.89$) than participants in the company's locus ($M=3.28$, $SD=1.83$, $p<.001$) and customer's locus scenarios ($M=2.91$, $SD=1.74$, $p<.001$).

ANOVA revealed a main effect of causal locus attribution on regret ($F(2, 126)=7.38$, $p<.001$). Participants in the customer's locus scenario reported higher regret ($M=5.63$, $SD=1.48$) than participants in the company's locus ($M=4.65$, $SD=1.52$, $p<.01$). This result supports H2a, indicating that higher internal attribution may lead to higher customer regret. Participants in the uncertain locus scenario also reported higher regret ($M=5.70$, $SD=1.27$) than participants in the company's locus ($p<.01$), but there was no significant difference on regret levels from uncertain and customer's locus ($p=.82$).

ANOVA also revealed that causal locus attribution affects disappointment ($F(2, 126)=9.36$, $p<.001$). Disappointment was higher among participants in the company's locus scenario ($M=5.96$, $SD=1.03$) than those in the customer's locus ($M=4.58$, $SD=1.97$, $p<.001$). This result supports H2b, indicating that higher external attribution may lead to higher customer disappointment. Participants in the uncertain locus scenario also reported higher disappointment ($M=5.55$, $SD=1.48$) than participants in the customer's locus ($p<.01$), but there was no significant difference in disappointment levels between uncertain and company's locus ($p=.22$).

Causal locus attribution also affected customer dissatisfaction ($F(2, 126)=20.50$, $p<.001$). Dissatisfaction was higher for participants in the company's locus scenario ($M=5.87$, $SD=1.11$) than for participants in the customer's locus ($M=3.84$, $SD=1.84$, $p<.001$) and uncertain locus scenarios ($M=4.85$, $SD=1.48$, $p<.01$). This result supports H2c, indicating that higher external attribution may lead to higher customer dissatisfaction. Participants in the customer's locus scenario reported the lowest dissatisfaction level, significantly different even from uncertain locus ($p<.01$). Figure 28 shows customer regret, disappointment, and dissatisfaction in each scenario.

Figure 28 – Customer regret, disappointment, and dissatisfaction for each attribution.



4.3.4 Discussion

This study tested hypotheses H2a, H2b, and H2c. Results supported all of them: the higher the internal attribution, the higher the regret, and the lower the disappointment and dissatisfaction. This study had a new element in comparison to study 1: the uncertain locus. There were no hypotheses regarding the effect of uncertainty on regret, disappointment, and dissatisfaction but it seems acceptable to think that results regarding the uncertain locus could be in-between results from customer's and company's locus, because these last two could be extremes of a causal locus attribution continuum.

Regardless the expectations about uncertain locus effects on the dependent variables, there is one result contradicting the self-serving bias perspective: Participants in the uncertain locus scenario reported to be as regretful as participants in the customer's locus scenario. This result shows that causal uncertainty does not necessarily imply in reduced emotional intensity. Since regret is a self-focused emotion experienced when we wish we had done something different (Zeelenberg & Pieters, 2007), participants who were uncertain about who they should blame felt as bad to themselves for something they did (or didn't do) as participants who knew they were the ones to blame. Thus, the tendency to make external attributions to protect the self was not fully working for participants in the uncertain locus scenario.

The other results regarding uncertain locus – disappointment level similar to company's locus and higher than customer's locus, dissatisfaction level lower than company's locus and higher than customer's locus – do not contradict the self-serving bias perspective. It only shows that being uncertain about who to blame in a failed co-produced service may lead to high levels of regret and disappointment and a moderate level of dissatisfaction if compared to knowing that either the company or the customer itself should be blamed.

4.4 GENERAL DISCUSSION

This research contributes to the service management literature under three perspectives: 1) showing the influence of co-production on causal locus attribution; 2) showing customers' reactions (i.e., regret, disappointment, and dissatisfaction) to failed co-produced services; and 3) showing how people react when causal locus attribution is uncertain. The first and second contributions are depicted in table 47, which brings a summary of the hypotheses results. The third contribution resulted from further investigation on the subject of causal locus attribution for failed co-produced services without a specific hypothesis about it.

Table 47 – Results of hypotheses

Hypotheses	Study 1	Study 2
H1: Customers who co-produce (vs. do not co-produce) tend to make more internal than external attributions for a service failure.	Supported	Not applicable
H2: In case of failed co-produced services, the higher the customer internal attribution, (a) the higher the regret and (b) the lesser the disappointment (c) and the dissatisfaction.	(a) Not Supported (b) Supported (c) Supported	(a) Supported (b) Supported (c) Supported

While study 1 shows that co-production may lead to more internal attributions (H1) and less dissatisfaction and disappointment towards the service provider, study 2 shows that the decrease in dissatisfaction and disappointment holds for failed co-produced services caused by customers. Actually, the decrease in dissatisfaction holds even when the customer is uncertain about who is the one to blame. Internal service failure attribution is positively associated with higher customer regret (H2a) – just in study 2 – and less disappointment toward the service provider (H2b) and dissatisfaction (H2c) – in both studies.

Both studies have results that contradict the self-serving bias. Study 1 shows that co-producers blame themselves more than no co-producers and study 2 shows co-producers facing an uncertain causal locus situation feel as regretful as co-producers facing a failed service caused by the customer (both indicating high self-blame). So, co-production may be direct or indirectly reducing the self-serving bas. The finding that co-production leads to more internal attributions contradicts the self-serving bias literature (Mezulis et al., 2004). But such finding is consistent with the idea that co-production is associated with perceived control and, consequently, internal attributions (Chan et al., 2010; Hui & Toffoli, 2002; Pacheco et al., 2013).

Taken together, results from both studies indicate that companies can benefit from co-production not only in satisfactory service encounters, but also in situations when failures occur. This is because customers will take at least part of the responsibility for a failure and feel less disappointed and dissatisfied when a failure happens in a co-production context. And luckily, it seems that the decrease in disappointment and dissatisfaction levels does not happen at the expense of an increase in regret level, in view of the fact that regret level was not affected by co-production in study 1. Considering that service failures are sometimes inevitable, these results bring important theoretical and managerial implications.

4.4.1 Theoretical implications

The key difference between this investigation and part of previous research is that it supports the idea that service companies can benefit of co-production even when service failures occur. Previous literature had already recognized the benefits of co-production but usually it does not address the positive results of co-production in failed co-produced services (for an exception see the paper of Bendapudi and Leone, 2003, which evaluates dissatisfaction rather than causal locus attribution). In this sense, co-production may be interesting for service companies, even when problems happen. The positive results are related to less external causal attributions and reduced levels of disappointment and dissatisfaction. During the literature review, only three papers (Heidenreich et al., 2015; Jong-Kuk et al., 2010; Yen et al., 2004) directly addressing the relationship between co-production and causal locus attribution in a failure situation were found, but our results evidence different conclusions, considering these three previous papers.

Yen et al. (2004) and Jong-Kuk et al. (2010) found that high participation level lead to more external attribution. So, why does the present research find co-production to be associated with higher internal attribution? This finding seems due to the fact that the present research does not stress participation level or customer effort. Yen et al.'s (2004) research scenario for high participation level (where customers have put real effort on doing everything right, doing their best during co-production) may not represent many daily situations of service encounters worldwide. It is natural to expect external attribution in their high participation level because the scenario exempts customers from any responsibility over the failure, showing they did everything right. And in the case of Jong-Kuk et al.' (2010) survey, the fact of asking participants about their participation level (inputs) in a failed co-produced service may have triggered self-serving bias (i.e., external attribution for failure) for at least two reasons: (1) if a customer provided several inputs to a failed co-produced service, it seems less likely that this customer forgot (omitted) an important input when compared to a customer who provided few inputs. Thus, if the customer did not do anything wrong, the service provider must be responsible for the failure; (2) if a customer provided several inputs, this customer could be more susceptible to commit a mistake (e.g., provide an inadequate input) than customers who provided few inputs. In other words, high participation level may be positively related to self-threat (e.g., if the customer provided a lot of inputs and the outcome was worse than expected, thus the quality of customers' inputs was low). Self-threat is positively related to self-serving bias (Campbell & Sedikides, 1999). Participation level is not only positively related to external attribution but it is also negatively related to satisfaction with the co-production process (Haumann, Güntürkün, Schons, & Wieseke, 2015). By not detailing how much effort the customer put on the failed co-produced service, the studies of this chapter allow participants to imagine how much they did for that service and indicate a level of responsibility that would match such effort. By letting participants freely imagine how much effort they put on the co-production process, this research tried to be as close as possible to customers' realities.

One could argue that the present results are similar to those of Heidenreich et al. (2015) regarding the effects of causal locus attribution, but they are not. Heidenreich et al. (2015) have found negative consequences of failed co-produced services: high co-production levels were associated with lower customer satisfaction. This could be framed as a dark side of co-production, as they propose. This research shows a bright side of such failures: the reduction of customer disappointment towards the company and reduced dissatisfaction. Bendapudi and Leone (2003) also suggested that co-production could mitigate the self-serving bias (although causal locus attribution was not assessed in their studies), but they advocate that this would only

happen when customers were given the option to co-produce. The present results show that the reduction of the self-serving bias may happen even without this option. This conclusion is relevant to service management literature because it may be applied to understand the consequences of failed co-produced services. This research seems to be the first to show that customers who co-produce tend to attribute the responsibility for a failure more to themselves (feeling more regretful sometimes) while customers who do not co-produce tend to attribute the failure to the company (feeling more disappointed and dissatisfied). This study is one of the first that tries to explain how different emotions emerge in a failed co-production context. Recent service literature argues for the importance of understanding how different emotions emerge in co-production contexts (Fliess, Dyck, & Schmelter, 2014).

4.4.2 Managerial Implications

This research suggests that service providers should employ co-production whenever possible. The results suggest that service providers may manage customer causal locus attributions concerning service failures even before their occurrence. By allowing the customer to co-produce services, companies are not only increasing the probability to have higher customer satisfaction and perceived quality (Golder et al., 2012; Hunt et al., 2012), but also increasing the probability that customers will take some responsibility over a failed co-produced service and feel less disappointed and dissatisfied. Strengthening co-production practices is important because customer causal locus attribution is not something that service providers can easily control, but they may affect it through a variable they may control: co-production.

From a managerial perspective, it is interesting to focus on co-production even when co-production increases regret through greater internal attribution – which was the case in study 2 – because disappointment and dissatisfaction are better predictors of word-of-mouth than regret (Zeelenberg & Pieters, 1999, 2004). Besides, disappointment is a better predictor of switching behavior (Zeelenberg & Pieters, 2004). Consequently, co-production could lead to less negative word-of-mouth and switching behaviors through lower disappointment and dissatisfaction levels. Also, the two studies from this article suggest that co-production (vs. no co-production) may lead to the lowest customer dissatisfaction level because co-production leads to higher internal attribution (finding from study 1) while internal attribution leads to the

lowest dissatisfaction level when compared to external (company's) and uncertain attribution (finding from study 2).

These findings might have an implication on the choice for a service recovery strategy as well. For instance, when the service failure is caused by the customer (internal attribution), both monetary and nonmonetary recovery strategies lead to the same customer satisfaction level (Fu, Wu, Huang, Song, & Gong, 2015). Thus, in case of failed co-produced services, both monetary and nonmonetary recovery strategies could be equally successful because co-production leads to more internal attributions for failures. The service provider could then choose the recovery strategy that better suits its preferences or business model.

4.4.3 Limitations and directions for future research

Although study 1 brings evidence that co-production leads to higher internal attribution than no co-production in two different service contexts, the study itself does not solve the literature inconsistency about the effects of co-production on causal locus attribution. It does not explain why previous research have found the opposite result (i.e., a positive relationship between co-production and external attribution). Even though we suppose that variables such as customer perceived control and effort could help to explain the reason why research on the subject points to opposite directions, we did not measure these variables. In spite of this limitation, this chapter contributes to the discussion of whether failed co-produced services could be less harmful to services providers than failed services that were not co-produced and provides material that could be further analyzed in a future meta-analysis. And this meta-analysis, in turn, could solve the literature inconsistency.

Another limitation is the fact that it was not possible to investigate differences in co-production versus no co-production in study 2. Because co-production affects causal locus attribution (Heidenreich et al., 2015; Jong-Kuk et al., 2010; Yen et al., 2004), it was not possible to have a factorial design without the interference of one manipulation (i.e., co-production) on the other (i.e., locus attribution). Thus, to compare customers' reactions to failed services for uncertain locus, customer's locus, and company's locus, we had to keep co-production constant. But at least this study showed that causal uncertainty is not always associated with lower emotional intensity level, since the regret level for uncertain locus was equivalent to the regret level for customer's locus and both were higher than the regret level for company's locus. Co-

production could be the factor explaining this result: co-production led to more internal attribution (in study 1) and the literature points that internal attribution and regret are positively related (Zeelenberg & Pieters, 2004). Thus, customers who co-produce could still have a high sense of responsibility even in face of causal uncertainty.

Regret and disappointment were investigated because they are the two emotions most closely related to decision making (Van Dijk & Zeelenberg, 2002). However, the very concept of these emotions is already associated to internal (in case of regret) and external (in case of disappointment) locus attributions. This makes the hypothesis about the effects of causal locus on regret and disappointment somehow obvious. We did not confirm the effect of internal attribution on regret in study 1 though. This could indicate either a bad fit of the regret measure to this specific data or that internal attribution for a service failure does not necessarily leads to regret. Either way, there are other emotions that may be relevant for a failed co-produced service context and which hypotheses could be less obvious. For instance, anxiety is one of the most frequent negative emotions people experience (Saffrey et al., 2008), while anger is a good predictor of behavioral reactions following service dissatisfaction (Kalamas et al., 2008). These and other negative emotions could be affected by co-production and locus attribution as well. Even positive emotions could be affected by co-production in service failure contexts. Future studies could investigate emotions that have not been investigated here. This would be interesting to check for further bright (or dark) sides of co-production.

The studies had both short-term and long-term service contexts – services that varied from minutes to months to be delivered – without investigating whether the length of a service influences customers' emotional reactions to failed co-produced services. Previous research has also adopted either short-term – purchasing a train ticket, reserving a room, shopping at a grocery store (Bendapudi and Leone, 2003; Heidenreich et al., 2015) – or long-term services – taking a university course (Yen et al., 2004) – without addressing the potential effects of service length on customer emotions and behaviours. Additionally, customer financial loss could be very different for each service failure adopted. For instance, customers could spend different amounts of money on a gym membership, a restaurant meal, and a T-shirt. Future studies could further examine the role of service length and financial loss in failed co-produced services.

5 THOUGHT SPEED AND CAUSAL LOCUS ATTRIBUTIONS

How fast someone thinks differs among individuals but also depends on the situation. For example, if someone else talks very quickly to you or there are a lot of fast moving images in the environment, then you will normally think faster. Thought speed affects emotional and behavioral reactions. For example, people who report fast thought speed (vs. regular or slow thought speed) experience more positive affect and take more risks (Chandler & Pronin, 2012; Pronin, 2013; Yang, Friedman-Wheeler, & Pronin, 2014).

Fast thought speed (FTS) leads to higher positive affect (Pronin et al., 2008; Pronin & Wegner, 2006) and it is also deemed to be responsible for increased energy, self-confidence, self-esteem, willingness to take risks, creativity, and capacity for solving novel problems (Pronin, 2013). One of the topics already discussed in this dissertation – the self-serving bias – has also been associated to some of these thought speed consequences. For instance, the self-serving bias (tendency to make internal attributions for success and external attributions for failure) is positively associated to positive affect and life satisfaction (Sanjuán & Magallares, 2014) and self-esteem (Weiner, 1985), while the absence or reduction of such bias is associated with depression (Mezulis et al., 2004; Peterson & Villanova, 1988). Hence, the self-serving bias protects people's self.

Given that FTS may increase positive affect and self-esteem, would it be necessary to protect the self with the self-serving bias after a failure? May the FTS reduce the self-serving bias? Reduction of the self-serving bias is beneficial for service companies, because it means customers will share some responsibility over the failures and acknowledge the company's responsibility over success.

The assumption that people with higher positive affect and self-esteem may not need that much of a tool like the self-serving bias which purpose is to protect the self is in line with the perspective of mood as a resource. According to this perspective, positive mood leads people to process positive as well as negative information about themselves. But in a negative mood state, people tend to avoid negative information about themselves because they lack the resources needed for coping with the affective costs of such negative information (Raghunathan & Trope, 2002). On the other hand, people with positive affect and high self-esteem tend to respond more defensively to a threat to their self-image than people with negative affect and low self-esteem, reporting higher self-serving bias (Campbell & Sedikides, 1999). In this case, FTS should lead to more external attribution for failures, increasing the self-serving bias.

However, there are at least two reasons to believe that thought speed may not affect causal locus attribution after a service failure: First, positive mood may serve as a goal in itself rather than a resource. When positive mood is a goal, people tend to focus on positive information about themselves, avoiding negative information (Trope, Ferguson, & Raghunathan, 2001). In this sense, if people tend to focus on positive information, they may keep on making internal attributions for success and external attributions for failure no matter their current mood or thought speed. Second, the effects of thought speed may be short-lived (Pronin, 2013), which means that such effects could last for a short period and be over (unobservable) after a service failure.

5.1 THOUGHT SPEED: A REVIEW

Pronin and colleagues argue that FTS leads to different emotional and behavioral outcomes when compared with both regular and slow thought speed (STS). For instance, Pronin and Wegner (2006) and Pronin et al. (2008) show empirical evidence that FTS leads to more positive affect. In order to formulate their hypothesis about FTS and positive affect, Pronin and colleagues used evidence of prior researches that were indirectly related to thought speed (i.e., studies that have not explicitly examined the effects of thought speed, but that could offer some hints for the hypothesis formulation). For example, the authors mention sources suggesting that:

- Faster processing elicits more positive mood (e.g., Monahan, Murphy, & Zajonc, 2000; Winkielman & Cacioppo, 2001);
- Music with a faster tempo is more likely to induce positive mood and arousal than music with a slower tempo (e.g., Gagnon & Peretz, 2003);
- Mania is often accompanied by fast thoughts and euphoria while depression is often accompanied by slow thoughts and dysphoria (e.g., Diagnostic and Statistical Manual of Mental Disorders, American Psychiatric Association, 1994);
- Stimulants such as amphetamines and caffeine lead to faster cognitive processing speed and elevate positive mood (e.g., Asghar, Tanay, Baker, Greenshaw, & Silverstone, 2003; Smit & Rogers, 2000);

- People describe near-death experiences as situations involving fast thoughts and an odd sense of euphoria and pleasurable emotions (e.g., Noyes & Kletti, 1977);
- Brainstorming sessions elicit rapid idea generation and feelings of enjoyment (e.g., Nijstad & Stroebe, 2006);
- Physical exercise may accelerate thoughts and improve people's mood (e.g., Brisswalter, Collardeau, & René, 2002; Hansen, Stevens, & Coast, 2001).

The effect of FTS on positive affect is independent of thought content (elating vs. depressing content) and ease of cognitive processing or fluency. In other words, FTS induces positive affect even when the thought content is more depressive and difficult to process (Pronin, 2013). Yang et al. (2014) found empirical evidence that the positive affect of individuals with mild to moderate depressive symptoms, as well as individuals with no depressive symptoms at all, may be increased by inducing fast thoughts. This was not possible in case of individuals with more severe depressive symptoms though. Despite of the influence of FTS on positive affect, it seems that FTS has no influence on negative affect (Pronin et al., 2008; Pronin & Wegner, 2006).

Chandler and Pronin (2012) provided empirical evidence that FTS leads to more risk taking. The authors measured risk taking behavior using the Balloon Analogue Risk Task (BART). This task consists of inflating balloons by clicking a pump. The more participants inflate the balloons, the more money they earn for it. But if a balloon bursts because it was too much inflated, participants do not earn any money for that balloon. Participants in the fast thought condition showed greater risk taking as they pumped the balloons more times than participants in the slow thought condition. The authors replicated this result with a self-reported measure of risk taking. According to the authors, the following facts form the rationale behind the hypothesis that FTS increases risk taking:

- People with the psychological disorder of mania exhibit fast thoughts and engage in risky behavior (e.g., Clark, Iversen, & Goodwin, 2001);
- Stimulant substances (e.g., cocaine and amphetamine) induce fast thoughts and people who take too much of these substances show more risky behavior (e.g., Leland & Paulus, 2005);
- People under time pressure show an elevated tendency to engage in the risky behavior of making high-stakes gambles (e.g., Dedonno & Demaree, 2008).

According to Pronin (2013), the occurrence of fast thoughts may be a signal to a person's mind and body that it is necessary to be ready for urgent action. The author suggests that the state of preparation for urgent action would be responsible for increased energy, self-confidence, self-esteem, willingness to take risks, creativity, and capacity for solving novel problems. The author argues that since FTS leads to such preparation for urgent action, its effects could be more short-lived than sustained, but this supposition was not tested.

5.2 POTENTIAL RELATIONSHIPS BETWEEN THOUGHT SPEED AND CAUSAL LOCUS ATTRIBUTIONS

There are some factors indicating that FTS could reduce external attribution for a service failure (i.e., reduce the self-serving bias). The rationale behind this potential effect begins with the fact that FTS increases positive affect and self-esteem (Pronin, 2013). The self-serving bias works in order to protect individuals' self-concept: internal attribution for failure lowers individuals' self-esteem, internal attribution for success raises individuals' self-esteem, and external attribution either for failure or success does not affect the self-concept (Weiner, 1985). If one's self-esteem and positive affect is raised by FTS, a negative event likely does not pose a big threat to one´s self-concept. Therefore, the protective feature of the self-serving bias does not seem extremely necessary for the maintenance of a positive self-concept when self-esteem and positive affect are high. After all, in which case should you be more careful with your food: when you have 5 apples or when you have only 1? If you lose 1 apple out of 5, you still have 4 apples left, but if you lose your only apple, you lose it all. The same analogy could be used to think about protecting the self-concept.

This rationale is reinforced by the literature about mood as a resource (Raghunathan & Trope, 2002; Trope et al., 2001). According to this literature, positive mood serves as a resource that facilitates the processing of both positive and negative self-relevant information. This happens because positive mood serves as a resource that mitigates affective costs associated with the processing of negative information about the self. It makes the processing of negative information bearable. In cases of negative mood, individuals tend to focus on processing of positive self-relevant information (avoiding negative information) because they are depleted of positive mood as a resource. Applying the same logic to a service dissatisfaction situation, customers with more positive mood may process self-relevant negative information such as

what did they do wrong (self-blame), while customers with more negative mood may avoid such negative information processing. This would result in more self-serving bias for those in a negative mood and less self-serving bias for those in a positive mood. Although thought speed is not supposed to influence negative mood, we may expect the first case of the previous sentence to be those with STS (since STS leads to less positive mood when compared to FTS) and the second case of the previous sentence to be those with FTS.

It is true that having less positive mood is not the same as having negative mood. So, comparing STS and FTS is not the same as comparing negative mood and positive mood, but rather lower positive mood and higher positive mood. However, it is reasonable to expect those in FTS to have more positive mood (i.e., more resource) than those in STS, establishing expectations similar to the situation of having vs. not having positive mood as a resource.

Corroborating this perspective of mood as a resource, Schuettler and Kiviniemi (2006) found evidence that positive mood experienced at the time of an illness diagnosis raised perceptions of self-efficacy (i.e., ability to successfully overcome the illness) while negative mood lowered perceptions of self-efficacy. Due to the positive mood, individuals may feel sufficiently efficacious to follow the treatment regimen and recover from the illness. The authors believe this is evidence of how positive mood may serve as a resource.

Besides, according to Raghunathan and Trope (2002), a negative mood indicates that something is wrong, stimulating individuals to survey the environment carefully to better understand and control it. Conversely, a positive mood indicates that everything is fine, making individuals to pay superficial attention to the environment. The authors argue that individuals in a negative (vs. positive) mood should engage in greater and more systematic elaboration. Mohanty and Suar (2014) found evidence corroborating more systematic information processing among individuals with negative (vs. positive) mood. Thinking about individuals with FTS (more positive mood), we may expect them to pay less attention to the environment than those individuals with STS (less positive mood) when trying to understand a service failure. Systematic processing should be greater among individuals with STS. With greater attention to the environment and systematic processing, we could expect individuals with STS to make more external attributions than individuals with FTS.

Considering what has been discussed so far about potential effects of thought speed on causal locus attribution, the following hypothesis is formulated:

H1: FTS (vs. STS) will lead to less external causal attributions for a service failure.

On the other hand, there is also evidence contradicting the rationale behind H1: According to Campbell and Sedikides (1999), people with positive affect tend to respond more defensively to the same threat as people with negative affect, hence, reporting higher self-serving bias. The same is true for people with high self-esteem versus low self-esteem (i.e., the former report higher self-serving bias). Thus, due to their high positive affect and self-esteem, people with FTS (vs. STS) should make more external causal attributions for service failures. Findings from Campbell and Sedikides (1999) came from a meta-analytic review, which means that more than one study indicated such relationship between positive mood and self-serving bias, as well as self-esteem and self-serving bias. The authors advocate the rationale that the higher the self-threat (i.e., the more a favorable view of the self is challenged or contradicted), the higher the self-serving bias.

This rationale and findings are corroborated by Coleman (2011). The author found that negative emotions (guilt and revulsion) led to more internal attributions for failure than the control condition. The author explains that his findings support the self-threat rationale because such negative emotions led to a drop in self-esteem, meaning that participants had less self-esteem to protect. So, the higher the self-esteem, the higher the threat to a valued self and the external attribution for failure. And it seems logical to expect that, in case of a failure, a person with high self-esteem would believe s/he had done things right, consequently, the blame might be on someone else. This whole idea contradicts the previously mentioned premise of mood as a resource: the idea that people with positive mood (i.e., FTS) process self-relevant negative information while people with negative mood avoid it.

Besides, the fact that a reduced level or the absence of the self-serving bias is associated with depression (Peterson & Villanova, 1988; Peterson et al., 1982) and that the self-serving bias effect is smaller for people with psychological disorders (Mezulis et al., 2004) is a signal that the bias predominantly exists in a happy and healthy mind. Therefore, chances are that people who are experiencing positive affect, such as people who were induced to have fast thoughts, are already attributing success to themselves and failures to external causes (i.e., they already present the self-serving bias).

One of the experiments conducted by Pronin et al. (2008) might be a sign that FTS could be positively related to the self-serving bias. In their experiment, participants listened to a tape of people brainstorming about a problem in order to do their own recording after that. Those in the FTS condition were told that their tape would go to a new group of subjects and they could use whatever ideas they want (including ideas already mentioned by the previous group). Those in the STS condition were told their tape would go back to the same group of subjects and they

should only say ideas that were not mentioned by the previous group. Results show that participants in the FTS condition reported faster thought speed, higher grandiosity, creativity, and elation than did their peers. When Pronin (2013) comments the results of this experiment, she highlights how ironic it is to find higher positive affect and self-esteem among people who used other people's ideas (participants in the FTS condition) as compared to people who generated their own ideas (participants in the STS condition). Are the former participants attributing success to themselves in a higher degree than the latter? In other words, is the self-serving bias stronger for those in the FTS condition? Therefore, a second and rival hypothesis is formulated:

H2: FTS (vs. STS) will lead to more external causal attributions for a service failure.

However, there are also some factors indicating that thought speed may have no effect on causal locus attribution. Changing from a mood as a resource perspective to a mood as goal in itself perspective, when positive mood is a goal, people ignore negative information about themselves and seek positive information to achieve or maintain a positive mood (Raghunathan & Trope, 2002). Therefore, if positive mood is a goal, external attributions for service failures would be expected irrespective whether customers experience STS or FTS. This could lead to a no effect of thought speed on causal locus attribution. The chance of a short-lived effect of thought speed (Pronin, 2013) is another factor pointing to a potential no effect on causal locus attribution.

The current literature review shows reasons to believe that FTS, through enhanced positive affect and self-esteem, could be associated with external attributions for a service failure in two ways: (1) it could lead to a negative effect on external attributions for a service failure (H1), (2) it could lead to a positive effect on external attributions (H2). But it could also have no effect on external attributions at all.

Four studies were conducted to test the hypotheses and other potential consequences of thought speed in face of a service failure. The next section describes the first study.

5.3 STUDY 1

Study 1 consisted of a single factor between subjects experiment. One hundred seventeen panel members of the Ghent University (68% women; M_{age}=22.21, *SD*=3.88) participated in this first study. This was the final sample after deleting 3 respondents who provided the wrong answer to the attention check (i.e., a multiple choice question about the content of the service failure). These respondents were deleted to eliminate those who were not paying attention to the questionnaire or did not understand the service failure.

5.3.1 Procedure

Thought Speed was manipulated at two levels: fast and slow. The same type of manipulation used by Chandler and Pronin (2012) and Pronin and Wegner (2006) was adopted. Participants were exposed to sentences about a student's regular day (e.g., "I woke up this morning at 8" and "I went to the bathroom") at either a fast (40 milliseconds per letter, 320 milliseconds intervals between sentences) or a slow speed (170 milliseconds per letter, 4,000 milliseconds intervals between sentences). According to Chandler and Pronin (2012), this fast condition is equivalent to half the time of normal reading speed while the slow condition corresponds to twice the time of normal reading speed. This manipulation took 2 minutes – manipulations from Chandler and Pronin (2012) and Pronin and Wegner (2006) usually takes 2 or 3 minutes. The only difference with Pronin and colleagues' manipulations is that they asked participants to read the sentences aloud. This was not the case in the present study because each lab session had more than one participant at the same time, which made the task of reading out loud inappropriate due to the potential disturbing effect it could have on the other participants.

After answering a manipulation check ("What did you feel was the speed of your thoughts, as you were reading the statements on the computer screen?" 1= very slow, 9 = very fast), which was the same manipulation check used by Pronin and Wagner (2006), participants read the following text about a service failure:

> "Imagine that you get to a hotel today. You have a very busy schedule, so all you want to do is to go to your room as soon as possible. At the reception desk, you mention you made an online reservation at this hotel some months ago (or at least you tried to). You say your name, but the receptionist cannot find any booking for you. There is no room available at the hotel, so you will have to find another place to sleep.

This is very inconvenient for you because you are in a hurry and have many things to do. Only after 15 minutes and several calls you are able to find another hotel to stay. Now you have to get there.
You go to the next hotel wondering whether there was any error message at the first hotel website when you tried to make your online reservation."

After reading the text, participants answered a question to check whether they read and correctly understood the described situation: "The story you read on the previous page was about: (a) a problem with the hotel reservation, (b) a problem with the hotel bill, (c) you could not talk to the hotel receptionist." Those who gave an incorrect answer to this question were deleted from the final sample because they failed to understand the content of the service failure. Participants also answered questions that measured a variety of cognitive, emotional, and behavioral reactions. Table 48 shows the measures used in this study in the same order they were asked in the questionnaire.

Table 48 – Measures from study 1

Name of the variable, Cronbach alpha, source	**Item(s)**
Causal locus attribution, Peterson et al. (1982)	1) Is the cause of the problem at the hotel due to something about you or to something about other people or circumstances (1 = totally due to other people or circumstances, 7 = totally due to me)
Failure severity, α=.87, Grégoire et al. (2010)	The failure caused me: 1) minor problems - major problems (7-point) 2) small inconveniences - big inconveniences 3) minor aggravation - major aggravation
Positive affect, α=.85, Watson et al. (1988)	1) Interested (1 = not at all and 7 = very much) 2) Excited 3) Strong 4) Enthusiastic 5) Proud 6) Alert 7) Inspired 8) Determined 9) Attentive 10) Active
Negative affect, α=.93, Watson et al. (1988)	1) Distressed (1 = not at all and 7 = very much) 2) Upset 3) Guilty 4) Scared 5) Hostile 6) Irritable 7) Ashamed 8) Nervous 9) Jittery 10) Afraid

State performance self-esteem, α=.75, Heatherton & Polivy (1991)	1) I feel confident about my abilities 2) I feel frustrated or rattled about my performance (R) 3) I feel that I am having trouble understanding things that I read (R) 4) I feel as smart as others 5) I feel confident that I understand things 6) I feel that I have less scholastic ability right now than others (R) 7) I feel like I'm not doing well (R)

Obs. Scales were translated into Dutch (participant's native language) by a specialist (i.e., marketing professor or PhD student) who was a native Dutch speaker fluent in English. The only exception was the State performance self-esteem scale, which already had a Dutch translation elaborated by Vermunt et al. (2001).

At the end of the questionnaire, participants had to answer a multiple-choice question about the manipulation: how did the person from the story go to the college (by foot, by bus, by bike). The purpose of asking them to do so was to avoid a potential awkward feeling they could have about paying attention to the sentences and doing nothing with them after that.

5.3.2 Results

ANOVA revealed that the manipulation was effective: the participants from the FTS condition reported they were thinking significantly faster than participants from the STS condition ($F(1, 115)=48.51$, $p<.001$, $M_{fast}=6.84$, $SD_{fast}=1.55$, $M_{slow}=4.21$, $SD_{slow}=2.46$).

Thought speed had a marginally significant effect on causal locus attribution ($F(1, 115)=3.05$, $p=.08$), such that participants from the FTS condition made slightly higher external attributions ($M=3.74$, $SD=1.41$) than participants from the STS condition ($M=4.18$[14], $SD=1.31$). The direction of this effect converges with H2. Because failure severity might impact attributions – for instance, a more severe failure could pose a bigger self-threat and generate more self-serving bias – failure severity was tested as a covariate using ANOVA and as a moderator using regression, but it was non-significant in both cases ($p=.21$).

Thought speed had no effect on state performance self-esteem ($F(1, 115)=1.48$, $p=.23$), positive affect ($F(1, 115)=.02$, $p=.89$), negative affect ($F(1, 115)=.56$, $p=.46$), or failure severity ($F(1, 115)=0.01$, $p=.92$). Since there was no significant effect of thought speed on positive and

[14] Low values indicate external attribution while high values indicate internal attribution.

negative affect scales, a MANOVA was conducted considering each item of these scales as a dependent variable. None of the twenty items were affected by thought speed (p>.10).

Regression analyses showed that self-esteem and negative affect had significant effects (p<.05) on locus attribution. Self-esteem was negatively related to locus attribution (t=-2.97, β=-.27, p<.01), indicating that the higher the self-esteem, the more external the attribution. Negative affect was positively related to locus attribution (t=2.28, β=.21, p<.05), indicating that the higher the negative affect, the less external the attribution. The other variables (positive affect and failure severity) were not significantly related to locus attribution (p>.10).

The software used to collect the data automatically registers the moment participants start and finish answering the questionnaire. This information was used to calculate participants' total time to answer the questionnaire, to check if any of the experimental groups could be answering faster than the other. ANOVA revealed that there was no difference in total time participants from both experimental conditions took to complete the questionnaire (F(1, 115)=.39, p=.53).

5.3.3 Discussion

From the variables measured in this study, causal locus attribution was the only one that was affected by thought speed. But the effect was only marginally significant, pointing to the same direction hypothesized by H2. It was expected that a potential effect of thought speed on locus attribution could be explained by differences in positive affect and self-esteem. But thought speed had no influence on affect (positive or negative) or self-esteem. Interestingly, the fact that lower self-esteem and higher negative affect were leading to lower external attribution (i.e., lower protection of the self) corroborates the self-threat rationale (Campbell & Sedikides, 1999; Coleman, 2011) used to formulate H2.

The fact that the total time that participants took to answer the questionnaire did not vary between the experimental conditions may imply that participants from the FTS condition are not thinking faster than participants from the STS condition during the entire questionnaire. Although there are other things influencing individuals' speed to complete a question (e.g., individual differences in reading skills and intelligence), the random assignment of the experimental conditions should equalize such differences between groups. When ignoring such individual differences, it could be expected that people who are thinking faster could finish a

task earlier than people who are thinking slower, but this did not happen. Let's say that participants who were induced to think faster during the manipulation kept their accelerated thoughts for some seconds or minutes after the manipulation, reading and answering the first questions faster than participants who were induced to think slower. Then, if both groups take the same time to answer the complete questionnaire, either participants' thoughts decelerated after the FTS manipulation or participants' thoughts accelerated after the STS manipulation (or both). This change in participants' thought speed during the questionnaire could help to explain the small difference between groups regarding causal locus attribution and the lack of other differences between the groups.

To advance on the investigation about the potential effects of thought speed, another study was conducted. Study 2 had some differences regarding thought speed manipulation, service failure description, and other measures. The change regarding the service failure is primordial to check how thought speed could influence causal locus attribution in other contexts. But changing thought speed manipulation and other measures is also important to gain external validity and a deeper understanding about the phenomenon. Also, measures that allow the investigation about whether participants' thought speed varies during the questionnaire were adopted.

5.4 STUDY 2

Study 2 also consisted of a single factor between subjects experiment. Eighty-four panel members of the Ghent University (61% women; M_{age}=21.96, SD=5.49) participated in this second study. This was the final sample after deleting 2 respondents who provided the wrong answer to a multiple choice question about the content of the service failure.

5.4.1 Procedure

Thought Speed was manipulated at two levels: fast and slow. The manipulation was similar to study 1, with the same presentation speed, but the content of the sentences was different. Participants were exposed to trivia sentences (e.g., "All polar bears are left handed"

and “Mercury is the smallest planet in the Solar System”), the same way Yang et al. (2014) did. This manipulation took 2 minutes and 30 seconds.

The same manipulation check from study 1 was adopted. Then, participants read a text about a service failure. The text, adapted from Choi and Mattila (2008), was the following:

> “Imagine that you have been suffering from serious coughing in the past few days. Due to the upcoming exams and papers you have to finish, you have not been able to make time to visit a hospital yet. You've just heard about a hospital nearby that offers not only good treatment services for coughing but also prompt services in accordance with appointment times. You decide to use this hospital.
>
> On the day of your appointment, you are in a hurry because you have to go back to your studies as soon as possible. Upon your arrival at the hospital at the appointed time, the hospital offers you service promptly. All you have left to do before leaving the hospital is make a payment for the service you received. As you walk toward the check-out desk, you notice that no service person is present at the desk to serve you. So you decide to take a seat at a bench near the desk and wait for a service person.
>
> You have waited for about 20 min but no service person has shown up yet. You are getting a little anxious since you have to hurry back to your studies. You look around to see how other patients who are also waiting to make payments are handling the situation. You notice that some of them pass the check-out desk right through and disappear around the corner. You wonder where they are going and decide to follow them. It turns out that there is another check-out desk around the corner and those patients are making their payments right there. You realize you could have left the hospital much earlier if you had only known earlier that this desk was available for you to use.
>
> You make your payment at this desk. You leave the hospital wondering whether there was any sign or direction to inform patients of this other check-out desk.”

After reading the text, participants answered a question to check whether they read and understood the service failure: “The story you read on the previous page was about: (a) you waiting a long time for an appointment at the hospital, (b) you waiting a long time for paying a bill at the hospital, (c) you leaving the hospital without the service you wanted.”

Because there was no effect of thought speed on positive affect in study 1 (contradicting Pronin and colleagues’ findings), two changes were introduced in study 2: First, a short version of the Pleasure, Arousal, and Dominance (PAD) scale (Mehrabian & Russell, 1974) substituted the positive affect from PANAS, used in study 1. PAD is a more comprehensive measure of emotional states than PANAS, which according to Mehrabian (1997) lacks validity as a general measure of positive and negative affect. Second, because the lack of effect of thought speed on positive affect and other measures might be due to a short-lived effect of the manipulation, participants’ thought speed was assessed not only right after the manipulation but also at the end of the questionnaire. This way, it is possible to check if differences evoked by the manipulation were sustained. The potential short-lived effect is also the reason why we used a short-version of PAD.

Because some participants from study 1 used a space for comments and suggestions to report that they were confused about whether they should think about the service failure to answer questions about positive and negative affect, study 2 had more specific guidelines about it. Participants were asked to think about the service failure to answer the negative affect measure. PAD was measured twice: (1) asking participants to forget about the failure and describe how they were feeling at that moment, and (2) asking participants to describe how they felt during the manipulation.

Two other scales were modified for this study. One of them was the negative affect scale (Watson et al., 1988). Some items from this scale were deleted because they were not likely to be evoked by the service failure described (e.g., scared and afraid) while other items were included because they seemed likely to be evoked (e.g., impatient and stupid). A self-integrity scale (Sherman et al., 2009) was included. Two of its items were not used – "I feel that I'm basically a moral person," and "I try to do the right thing" – because they were measures about moral or ethical behavior, which does not seem relevant for the scope of this research. The self-integrity scale measures the extent to which individuals view themselves as moral, adequate, and efficacious (Sherman et al., 2009) and, just as self-esteem, it is a measure of self-worth. Since there was no effect of thought speed on self-esteem in study 1, study 2 replaced the self-esteem scale by the self-integrity scale.

Also, additional measures of locus attribution and controllability were adopted in this study to check whether the results would vary depending on the chosen measure. Table 49 shows all the measures used in this study in the same order they were asked in the questionnaire.

Table 49 – Measures from study 2

Name of the variable, Cronbach alpha, source	**Item(s)**
Causal locus attribution, Peterson et al. (1982)	1) Same item used in study 1
Internal locus attribution, Chu et al., (2013)	1) To what extent do you think the long waiting time for paying the bill has to do with you (1 = not at all and 7 = very much)
Internal controllability attribution, Choi and Mattila (2008)	1) To what extent do you think you could have prevented that waiting time (1 = not at all and 7 = very much)
Negative affect (related to the failure), α=.67, modified version of the negative affect from Watson et al. (1988)	1) Distressed (1 = not at all and 7 = very much) 2) Upset 3) Angry 4) Irritable 5) Ashamed 6) Nervous 7) Impatient

	8) Stupid
Failure severity, α=.86, Grégoire et al. (2010)	The failure caused me: 1) minor problems - major problems (7-point) 2) small inconveniences - big inconveniences 3) minor aggravation - major aggravation
Pleasure (at the moment), α=.86, Mehrabian and Russell (1974)	1) unhappy – happy (7-point) 2) unsatisfied – satisfied 3) annoyed – pleased
Arousal (at the moment), α=.52, Mehrabian and Russell (1974)	1) relaxed – stimulated (7-point) 2) calm – excited 3) sleepy – wide-awake
Dominance (at the moment), α=.58, Mehrabian and Russell (1974)	1) influenced – influential (7-point) 2) cared for – in control 3) submissive – dominant
Self-integrity, α=.81, modified version of Sherman et al. (2009)	1) I have the ability and skills to deal with whatever comes my way (1 = Totally disagree and 7 = Totally agree) 2) On the whole, I am a capable person 3) I am a good person 4) When I think about the future, I'm confident that I can meet the challenges that I will face 5) Even though there is always room for self-improvement, I feel a sense of completeness about who I fundamentally am 6) I am comfortable with who I am
Pleasure (during the manipulation), α=.69, Mehrabian and Russell (1974)	Same items previously mentioned in this table
Arousal (during the manipulation), α=.79, Mehrabian and Russell (1974)	Same items previously mentioned in this table
Dominance (during the manipulation), α=.52, Mehrabian and Russell (1974)	Same items previously mentioned in this table
Thought speed (at the end of the questionnaire)	How is you thought speed now (9-point) 1) very slow / very fast

Obs. Scales were translated into Dutch (participant's native language) by a specialist (i.e., marketing professor or PhD student) who was a native Dutch speaker fluent in English.

It was also required that participants wrote two sentences from the manipulation at the end of the questionnaire, pretending that the trivia sentences were some form of attention task. Similar to study 1, the purpose of asking them to do so was to avoid a potential awkward feeling from doing nothing with the sentences from the manipulation. The amount of time that participants spent in each questionnaire page was measured to check whether participants from the FTS condition were answering faster than participants from the STS condition.

5.4.2 Results

The manipulation was effective since the participants from the FTS condition reported they were thinking significantly faster than the participants from the STS condition (F(1, 82)=12.20, p<.001, M_{fast}=6.40, SD_{fast}=1.78, M_{slow}=4.80, SD_{slow}=2.37).

ANOVA showed that there was no effect of thought speed on measures of locus attribution (F(1, 82)=.10, p=.75), internal locus attribution (F(1, 82)=.09, p=.76), and internal controllability (F(1, 82)=.01, p=.93). Thus, there was neither support for H1 nor H2. Failure severity was a significant covariate for locus attribution and internal locus though (p<.05). Thought speed also had no effect on negative affect (F(1, 82)=1.67, p=.20), self-integrity (F(1, 82)=.004, p=.95), and failure severity (F(1, 82)=.06, p=.81).

Thought speed affected arousal (F(1, 82)=23.56, p<.001) and dominance during the manipulation (F(1, 82)=6.65, p<.05), such that participants from the FTS condition reported to be more aroused (M=4.74, SD=.92) and more dominated (M=4.30, SD=.74) than participants from the STS condition ($M_{arousal}$=3.53, $SD_{arousal}$=1.35, $M_{dominance}$=4.71, $SD_{dominance}$=.73). Severity was a significant covariate for arousal during the manipulation (p=.05). There was no significant difference between participants from the two experimental conditions regarding pleasure during the manipulation (p=.53). When asked to forget about the service failure and indicate how they were feeling at the moment (during the questionnaire), participants from both conditions reported similar levels of pleasure (p=.42), arousal (p=.14), and dominance (p=.86).

Regarding the item measuring thought speed at the end of the questionnaire (1 = very slow and 9 = very fast), there was no difference in thought speed between participants from the FTS and STS condition (F(1, 82)=.21, p=.65, M_{fast}=5.63, SD_{fast}=1.42, M_{slow}=5.46, SD_{slow}=1.83). Paired samples t-test was used to check whether participants' thought speed at the end of the questionnaire was slower or faster than right after the video (manipulation). Participants from the FTS condition reported their thought speed was 6.40 right after the manipulation and 5.63 at the end of the questionnaire, which indicates that the latter was significantly slower than the former (t=2.32, p=.03). Participants from the STS condition reported their thought speed was 4.80 right after the manipulation and 5.46 at the end of the questionnaire, with no significant difference between the latter and the former (t=-1.51, p=.14).

The time participants from each group took to answer each questionnaire page did not vary (p>.10)[15], except for the time they took to write two sentences from the manipulation video (F(1, 82)=10.37, p<.01). Participants from the FTS condition spent 49 seconds on this page, while participants from the STS condition spent 38 seconds. There was a marginally significant difference between groups regarding the total time to answer the questionnaire. In average, participants from the FTS condition took extra 40 seconds to answer the complete questionnaire than participants from the STS condition (F(1, 82)=3.14, p=.08).

Contrary to study 1, regression analyses showed no effect of self-integrity and negative affect on causal locus attribution (p>.10). Severity had a significant effect on it (t=-2.2, p<.05, such that the more severe the failure, the more external the attribution. Although it explains only 6% of locus variance (R^2=.06). However, when testing failure severity as a moderator using multiple regression (i.e., when testing whether there is an interaction effect of thought speed and failure severity on locus attribution), no significant effect was found (p>.10) – even failure severity was no significant.

5.4.3 Discussion

Results from this second study suggest that thought speed has no effect on causal locus attribution for a service failure. This may be due to a short-lived effect of the thought speed manipulation. Although participants from the FTS condition reported to be thinking faster than participants from the STS condition during the manipulation, there is some evidence pointing out that this difference of thought speed between groups did not last long.

First, at the end of the questionnaire, participants from the FTS condition reported they were thinking slower than right after the manipulation. Both FTS and STS groups reported to have statistically equivalent thought speed at the end of the questionnaire.

Second, the time both groups spent on the next pages of the questionnaire was statistically the same – except for the time to write sentences from the manipulation. There are probably other factors influencing the time participants take to answer a questionnaire besides

[15] This data was checked page per page and the time was equivalent on every page but the one mentioned in the text.

thought speed (e.g., individual differences regarding fluency). Yet, taken together with other results, this might suggest that the differences in thought speed evoked by the manipulation were not sustained. We have to admit though that participants from the STS condition were exposed to less sentences than participants from the FTS condition, and each sentence from the STS condition remained on the screen for a longer period. Therefore, it was probably easier for participants from the STS condition remember, choose, and write two sentences, which explains why these participants were faster to go through this questionnaire page.

Third, although participants from the FTS condition reported to feel more aroused and more dominated than participants from the STS condition during the manipulation, both groups did not differ in terms of arousal and dominance later on. All of these seems to be evidence that even though the manipulation was effective, the differences in thought speed between groups were short-lived, and participants soon returned to a regular thought speed level (i.e., close to the scale middle-point).

The likely short-lived differences in thought speed may be the reason why there was no effect of thought speed on pleasure. Based on findings from Pronin and colleagues, it was expected to find higher positive affect among the participants induced to think faster. But another possible reason for the lack of effect of thought speed on pleasure could be the differences in reported dominance. The FTS group reported to feel more dominated (i.e., less in control) than the STS group during the manipulation. This increased feeling of being dominated could have reduced the pleasure that the participants from the FTS condition would normally feel.

Study 3 was conducted with a different thought speed manipulation and service failure to further investigate potential effects on causal locus attribution and other customer emotional reactions.

5.5 STUDY 3

Study 3 consisted of a single factor between-subjects experiment. Once again, thought speed was manipulated (fast vs. slow). Fifty-three panel members of the Ghent University (70% women; M_{age}=21.22, SD=2.25) participated in this study. This was the final sample after deleting 5 respondents with wrong answers for the attention checks (i.e., a multiple choice

question about the content of the failure service and a question asking participants to choose option number 5).

5.5.1 Procedure

A different thought speed manipulation was used. A video containing images and information about products of a French car manufacturer was created. The purpose of this video was to manipulate thought speed the same way service providers could do through their advertising material. Rather than just reading trivia sentences, participants were watching what could be a promotional video from a car dealership. Sentences from the video were presented in the same speed adopted in studies 1 and 2 (i.e., 40 milliseconds per letter for FTS and 170 milliseconds per letter for STS condition). While a moving image was displayed for 1.75 seconds in the FTS condition, the same image was displayed for 7 seconds in the STS condition. This makes the speed of the image on FTS condition 4 times faster than on STS condition, similar to the proportion of milliseconds per letter, which is 4.25 times faster for the FTS condition. The video lasted for 2 minutes for both experimental condition. The videos of each condition had 1 minute of sentences and 1 minute of text, to keep content equivalent between them. The same manipulation check from studies 1 and 2 was used.

Then, participants were presented with the following service failure:

> "You visit a local car dealer to buy a new car. You see a new model that you like a lot. The show room car has a red exterior and the interior also comes with a red coachwork with black seats. You like this combination a lot and mention this explicitly to the salesperson. He asks you to step in his office to calculate how much the car would cost with all the extra options you like and all your preferences (such as the red interior). You are pleased, but since it is the first dealer you visit, you decide to visit a few other dealers before the purchase. As you didn't find any better option, you return to the first dealer the next day. The salesperson who helped you before has a day off, but his colleague helps you out. He mentions that all details of your request are still in the computer, he prints the offer and asks you to sign. When the car is delivered, it turns out that the interior is grey instead of red. You are very disappointed since you explicitly asked for the red interior – at the first salesperson. The second salesperson did not ask you and just ordered the standard interior and you did not notice it on the document you signed."

Different from studies 1 and 2, the service failure in this study was not about 15 or 20 minutes of waiting time and the scenario did not suggest that participants were in a hurry. We

changed the nature of the service failure to something unrelated to time pressure in order to avoid that participants from the STS condition could be primed to think faster by the content of the service failure.

Table 50 shows the measures used after the service failure. Most of the measures from this study were the same from study 2. More items were added to measure negative affect (e.g., angry with myself, angry with the salesperson, helpless, negligent, etc.). The measures appear in the table in the same order they appear in the questionnaire.

Table 50 – Measures from study 3

Name of the variable, Cronbach alpha, source	**Item(s)**
Causal locus attribution, Peterson et al. (1982)	Same item from studies 1 and 2
Internal locus attribution, Chu et al. (2013)	Same item from study 2
Internal controllability attribution, Choi and Mattila (2008)	Same item from study 2
Negative affect (related to the failure), α=68, modified version of the negative affect from Watson et al. (1988)	1) Distressed (1 = not at all and 7 = very much) 2) Upset 3) Angry with myself 4) Angry with the salesperson 5) Helpless 6) Disappointed 7) Deceived 8) Irritable 9) Ashamed 10) Negligent 11) Irresponsible 12) Impatient 13) Stupid
Failure severity, α=.76, Grégoire et al. (2010)	Same items from study 2
Pleasure (at the moment), α=.86, Mehrabian and Russell (1974)	Same items from study 2
Arousal (at the moment), α=.61, Mehrabian and Russell (1974)	Same items from study 2
Dominance (at the moment), α=.78, Mehrabian and Russell (1974)	Same items from study 2
Self-integrity, α=.93, modified version of Sherman et al. (2009)	Same items from study 2

Pleasure (during the manipulation), α=.90, Mehrabian and Russell (1974)	Same items from study 2
Arousal (during the manipulation), α=.77, Mehrabian and Russell (1974)	Same items from study 2
Dominance (during the manipulation), α=.68, Mehrabian and Russell (1974)	Same items from study 2
Thought speed (at the end of the questionnaire)	Same item from study 2

Obs. Scales were translated into Dutch (participant's native language) by a specialist (i.e., marketing professor or PhD student) who was a native Dutch speaker fluent in English.

Similar to study 2, participants had to remember and write things they read during the manipulation. This time, they had to write the name of two cars from the video. The amount of time that participants spent on each questionnaire page was again measured.

5.5.2 Results

Thought speed manipulation was effective ($F(1, 51)=16.14$, $p<.001$). Participants from the FTS condition reported to be thinking faster than participants from the STS condition ($M_{fast}=6.16$, $SD_{fast}=1.88$, $M_{slow}=3.77$, $SD_{slow}=2.45$).

Similar to study 2, thought speed had no effect on locus attribution ($F(1, 51)=1.39$, $p=.24$), internal attribution ($F(1, 51)=0.08$, $p=.78$), or internal controllability ($F(1, 51)=1.46$, $p=.23$). Thought speed also had no effect on self-integrity ($p=.53$), negative affect ($p=.27$), and severity ($p=.89$).

Thought speed had a significant effect on arousal during the manipulation ($F(1, 51)=16.81$, $p<.001$), such that participants from the FTS condition reported to be more aroused than participants from the STS condition ($M_{fast}=4.32$, $SD_{fast}=1.17$, $M_{slow}=2.94$, $SD_{slow}=1.26$). But there was no effect on pleasure ($F(1, 51)=.26$, $p=.61$) and dominance during the manipulation ($F(1, 51)=.71$, $p=.41$). When asked to forget about the service failure and indicate how they were feeling at the moment (during the questionnaire), participants from both conditions reported similar levels of arousal ($p=.81$) and dominance ($p=.17$), but slightly different levels of pleasure ($F(1, 51)=3.51$, $p=.07$). This indicated a marginally significant effect

of thought speed on pleasure during the questionnaire, such that participants from the FTS condition reported a little lower level of pleasure than participants from the STS condition (M_{fast}=4.30, SD_{fast}=1.02, M_{slow}=4.88, SD_{slow}=1.22).

Participants' thought speed levels at the end of the questionnaire did not differ between the experimental groups (F(1, 51)=.10, p=.76). Participants from the FTS condition reported, on average, 6.16 for the first measure (i.e., right after the manipulation) and 5.52 for the second measure (i.e., at the end of the questionnaire). Paired samples t test suggests that their thought speed had no significant change during the questionnaire (t=1.47, p=.15). However, the fact that participants from the STS condition reported 3.77 for the first and 5.36 for the second measure suggests that their thought speed became significantly faster during the questionnaire (t=-2.16, p<.05).

Similar to study 2, participants from both experimental conditions took on average the same time on each page of the questionnaire (p<.10). The only exception was again on the page where they had to remember and write something from the thought speed manipulation (F(1, 51)=5.43, p<.05). Participants from the STS condition took less time to do this task than participants from the FTS condition (M_{fast}=20 seconds, SD_{fast}=8 seconds, M_{slow}=16 seconds, SD_{slow}=5 seconds), just as in study 2. The total time participants took to answer the complete questionnaire was also different between the experimental conditions (F(1, 51)=6.86, p<.05). On average, participants from the FTS condition answered the questionnaire 44 seconds faster than participants from the STS condition. This is the opposite from what happened in study 2.

Regression analyses showed a significant effect of negative affect on locus attribution, such that the higher the negative affect, the less external the attribution (t=2.31, β=.31, p<.05). But it could explain only 10% of locus variance (R^2=.10). Self-integrity also had significant effect on locus attribution, such that higher self-integrity led to less external attribution (t=4.03, β=.49, p<.001), converging with the rationale behind H1. It explained 24% of locus variance (R^2=.24). The result regarding negative affect is similar to study 1, while the result regarding self-integrity is the opposite from study 1. There was also a marginally significant effect of arousal (at the moment rather than during the manipulation) on causal locus (t=-1.84, β=-.25, p=.07), such that the higher the arousal, the more external the attribution, converging with the rationale used to formulate H2. This effect was only observed in study 3. Unlike study 2, failure severity had no effect on locus attribution (p>.10). Also, failure severity was neither a covariate (p=.91) nor a moderator (p=.89) of the relationship between thought speed and causal locus attribution.

5.5.3 Discussion

The results from this study confirm most of the findings from study 2. Let's take a look at the similarities between both studies. First, there was no effect of thought speed on causal attribution, internal attribution, or internal controllability. Second, there was no effect of thought speed on most of the variables measured. Third, participants from FTS condition reported to feel more aroused (i.e., stimulated and excited) during the manipulation, but not after that, during the questionnaire. This suggests that the effect of the manipulation was short-lived. Fourth, participants' reported thought speed at the end of the questionnaire did not vary between the two experimental groups. And fifth, the average time the groups spent on each page of the questionnaire was the same, suggesting that their thought speed could also be the same.

But there were also some differences between studies 2 and 3. Only in study 3, participants from the FTS condition reported a little less pleasure during the questionnaire than participants from the STS – the difference was only marginally significant though (p=.07). The opposite was expected based on Pronin and colleagues, whose findings point to more positive affect among participants from the FTS condition. Their measure of positive affect contemplates items such as excited and alert, which matches the content of the arousal scale used in studies 2 and 3, as well as happy and powerful, which matches the contents of the pleasure and dominance scales, respectively. While the marginally significant difference between the experimental groups regarding pleasure in study 3 is far from being a strong evidence that FTS could lead to less pleasure than STS, the lack of significant differences in positive affect (study 1), pleasure (study 2), arousal, and dominance (studies 2 and 3) seems to make a stronger case for an unsustained effect of the thought speed manipulation. In other words, there is more reason to believe in a no effect of thought speed on affect measures than a negative effect.

Another difference between studies 2 and 3 refers to the total time to complete the questionnaire. In study 2, participants from the FTS condition took more time to complete the questionnaire (extra 40 seconds) than participants from the STS condition – this difference was only marginally significant (p=.08). But the opposite happened in study 3, participants from the FTS condition took less time to complete the questionnaire (minus 44 seconds) than participants from the STS condition (p<.05). Since participants from the FTS condition were forced to read faster, they could have kept on using some of this fast pace to read texts and questions from the

questionnaire, finishing it in less time than participants from the STS condition, which would explain the result from study 3. Also, due to increased self-esteem, self-confidence, and risk-taking behavior (Chandler & Pronin, 2012; Pronin, 2013), participants from the FTS condition could be able to choose more easily and faster their answers to objective questions like the ones from the questionnaire. On the other hand, a fast reading speed could impair participants' understanding of what they were reading, making them reading some sentences for the second time or using extra time to think about the sentences to properly understand them, which would explain the result from study 2. It is not possible to make conclusive inferences about such differences in time to complete the questionnaire. Especially because the total time to answer the questionnaire in study 1 was the same for the two experimental condition – no significant differences (p=.53).

A new study was conducted with the main purpose of extending the differences in thought speed during the questionnaire. In other words, the new study tries to make participants from the STS (FTS) condition keep the slow (fast) thought pace throughout the questionnaire to check whether thought speed would then impact causal locus attribution. The next section describes this study.

5.6 STUDY 4

Study 4 consisted of a single factor between-subjects experiment. Thought speed was manipulated at three levels: fast, normal (NTS), and slow. NTS condition was introduced to check, in case of potential effects of thought speed on other variables, whether it is the STS or FTS condition (or both) that differ from the average thought speed and its effects. For instance, in case STS and NTS lead to the same locus attribution level, while FTS leads to a different level (e.g., less or more external attribution than STS and NTS), we will have evidence suggesting that it is the acceleration rather than the deceleration of thoughts that triggers differences in attribution. One hundred and five panel members of the Ghent University (52% women; M_{age}=20.58, SD=1.43) participated in this study. This was the final sample after deleting 32 respondents with wrong answers for a multiple choice question about the content of the failure (13 respondents from the STS condition, 5 from the NTS, and 14 from the FTS).

5.6.1 Procedure

A different thought speed manipulation was used. Aiming to make the differences in thought speed last longer, we told participants to keep a fast/normal/slow thought and reading pace during the questionnaire. Table 51 shows the texts used to explain what participants were expected to do:

Table 51 – Explanatory texts for the experimental groups

FTS	NTS	STS
In this task we are interested in the extent to which the speed of thinking during the performance of a task affects how respondents feel afterwards. Please speed up your thoughts during filling out the questionnaire. Read the sentences quickly and think them over in a fast way. This does not mean that you should skip parts of sentences or respond impulsively without thinking over your answers. All you have to do is try to speed up your normal pace of reading and thinking. To get you in the right mood, we will expose you to a video in which the text will come in a fast pace. Try to keep this pace during the remainder of this questionnaire. In the end, we will ask you how you experienced working at this pace. Pay also close attention to the content of the video because you will also get questions about this.	In this task we are interested in the extent to which the speed of thinking during the performance of a task affects how respondents feel afterwards. Please keep your thoughts in a normal pace during filling out the questionnaire (so neither too slow nor too fast). Read the sentences and think them over at a 'normal pace'. This does not mean that you should change the way you normally read the questions or think differently about your answers. All you have to do is try to keep an average pace of reading and thinking. To get you in the right mood, we will expose you to a video in which the text will come at such an average pace. Try to keep this pace during the remainder of this questionnaire. In the end, we will ask you how you experienced working at this pace. Pay also close attention to the content of the video because you will also get questions about this.	In this task we are interested in the extent to which the speed of thinking during the performance of a task affects how respondents feel afterwards. Please slow down your thoughts during filling out the questionnaire. Read the sentences slowly and think them over slowly. This does not mean that you should read the questions more than once or think harder about your answers. All you have to do is try to slow down your normal pace of reading and thinking**.** To get you in the right mood, we will expose you to a video in which the text will come in a slow pace. Try to keep this pace during the remainder of this questionnaire**.** In the end, we will ask you how you experienced working at this pace. Pay also close attention to the content of the video because you will also get questions about this.

Then, each experimental group watched a video showing what we consider to be a fast/normal/slow pace. The videos contained sentences about a service failure, which was a short version of the service failure from study 2. In this short version, we removed all the content that could indicate that participants were in a hurry, because we wanted to avoid inducing participants from the STS condition to have a sense of urgency, which could speed up their thoughts. The purpose of introducing the service failure during the manipulation video was to reduce the text that participants had to read between the thought speed manipulation and the causal attribution items. This way, if differences in thought speed were unsustained until the

end of the questionnaire, at least we were increasing the chance that they could last until the attribution items.

Sentences from the videos were presented in the same speed adopted in studies 1, 2, and 3 (i.e., 40 milliseconds per letter for FTS and 170 milliseconds per letter for STS condition). The speed adopted for the NTS condition was 80 milliseconds per letter, which is the average reading speed for Pronin and Wegner's (2006) sample. This way, the FTS condition is twice as fast as the NTS, while the STS condition is twice as slow as the NTS, similar to Pronin and Wegner's (2006) study. In comparison to studies 1 and 2, the interval between sentences changed: from 320 to 600 milliseconds in the FTS condition and from 4,000 to 1,400 milliseconds in the STS condition. The purpose of this changes was to provide extra time for participants in the FTS condition – so they could understand the service failure they were reading – and reduce the time that participants in the STS condition have to wait for the next sentence. We assume that now that participants are aware of the thought speed manipulation, the role of the videos is more informative (i.e., they inform the speed that each participant should adopt) rather than an unconscious manipulation. Therefore, we believe that the interval between sentences has no need to be as extreme as in studies 1 and 2. The interval between sentences for the NTS condition was 1,000 milliseconds.

Different from studies 1, 2, and 3, in which we kept the same manipulation length for the experimental conditions by having differences in the content of the manipulation (i.e., the FTS condition always had more content than the STS condition), this time we chose to keep the same content and vary the video length (25 seconds for the FTS condition, 47 seconds for the NTS condition, and 90 seconds for the STS condition). We chose to proceed this way because providing more/less information about the service failure across the experimental groups would probably influence participants' perceptions and attributions regarding the failure. Thus, all participants read the same 12 sentences about the service failure, which were:

1) Imagine that you are suffering from serious coughing.
2) You decide to go to a hospital.
3) A doctor examines you
4) and prescribes something for your cough.
5) You go to the check-out desk,
6) but there is no service person at the desk.
7) You have waited for about 30 min,
8) but no service person has shown up yet.
9) There is another check-out desk around the corner

10) and other patients are making their payments there.
11) You wonder whether there was any sign
12) to inform patients of this other check-out desk.

After the videos, participants had to answer the same manipulation check used in studies 1, 2, and 3 and a multiple choice question about the content of the service failure – whether it referred to 30 minutes waiting for (a) paying the hospital bill, (b) being examined by a doctor, or (c) buying medication. Measures of behavioral intention – repurchase, complaint, and negative word-of-mouth (NWOM) – were included in the questionnaire. The purpose was to investigate other potential effects of thought speed now that we expect the differences in thought speed to last longer.

Because the self-integrity scale used in studies 2 and 3 is more trait-related, once again we adopted the state performance self-esteem used in study 1, which is sensitive to short-lived changes in self-esteem (Heatherton & Polivy, 1991). A state measure is more appropriate than a trait for this study in which we expect a situational factor (i.e., an induced change in thought speed) to affect self-esteem. Besides the state performance self-esteem, we also measured the state social self-esteem. Both of them are subscales of the State Self-Esteem Scale (SSES). The performance subscale mainly refers to perceived abilities to perform a task, while the social subscale mainly refers to social evaluation/comparison (Heatherton & Polivy, 1991). Table 52 shows the measures of this study in the same order from the questionnaire.

Table 52 – Measures from study 4

Name of the variable, Cronbach alpha, source	**Item(s)**
Causal locus attribution, Peterson et al. (1982)	Same item from studies 1, 2, and 3
Internal locus attribution, Chu et al. (2013)	Same item from studies 2 and 3
Internal controllability attribution, Choi and Mattila (2008)	Same item from studies 2 and 3
Repurchase intention, Choi and Mattila (2008)	1) When I need to use a hospital again in the future, I will choose this hospital (1 = strongly disagree, 7 = strongly agree)
NWOM intention, Choi and Mattila (2008)	1) I am likely to speak negatively about this hospital service to others (1 = strongly disagree, 7 = strongly agree)
Complaining intention	1) It is likely that I will complain to the hospital about what happened (1 = strongly disagree, 7 = strongly agree)

State performance self-esteem, α=.85, Heatherton and Polivy (1991)	Same items from study 1
State social self-esteem, α=.81, Heatherton and Polivy (1991)	1) I am worried about whether I am regarded as a success or failure (R) 2) I feel self-conscious (R) 3) I feel displeased with myself (R) 4) I am worried about what other people think of me (R) 5) I feel inferior to others at this moment (R) 6) I feel concerned about the impression I am making (R) 7) I am worried about looking foolish (R)
Pleasure (at the moment), α=.85, Mehrabian and Russell (1974)	Same items from studies 2 and 3
Arousal (at the moment), α=.56, Mehrabian and Russell (1974)	Same items from studies 2 and 3
Dominance (at the moment), α=.74, Mehrabian and Russell (1974)	Same items from studies 2 and 3
Thought speed (at the end of the questionnaire)	Same item from studies 2 and 3

Obs. Scales were translated into Dutch (participant's native language) by a specialist (i.e., marketing professor or PhD student) who was a native Dutch speaker fluent in English, except for the state performance and social self-esteem scales, which already had a Dutch translation elaborated by Vermunt et al. (2001).

Because we told in the beginning of the questionnaire that we were interested in the extent to which the speed of thinking during the performance of a task affects how respondents feel afterwards, we asked their perceptions about it at the end of the questionnaire. More specifically, we asked (a) whether they were able to maintain the required reading and thinking pace during most part of the questionnaire, (b) whether they liked to read and think at the pace they were required to, (c) whether they prefer a different reading and thinking speed, and (d) whether the required pace made them concentrate better (1 = totally disagree, 5 = totally agree). Just as in studies 2 and 3, the amount of time that participants spent on each questionnaire page was measured.

5.6.2 Results

Thought speed manipulation was effective ($F(2, 102)=25.11$, $p<.001$). Results of LSD post-hoc tests show that participants from the FTS condition reported to be thinking faster than

participants from the NTS condition (M_{fast}=6.06, SD_{fast}=1.18, M_{normal}=4.68, SD_{normal}=1.52, p<.001), which in turn reported to be thinking faster than participants from the STS condition (M_{slow}=3.30, SD_{fast}=1.88, p<.001).

Thought speed had a significant effect on locus attribution (F(2, 102)=5.46, p<.01), such that participants from the FTS condition reported more external attribution than participants from the STS condition (M_{fast}=2.77, SD_{fast}=1.50, M_{slow}=4.00, SD_{slow}=1.68, p<.01). This result supports H2 just as the result from study 1. Participants from the NTS condition also reported more external attribution than participants from the STS condition (M_{normal}=3.17, SD_{normal}=1.41, p<.05), but there was no significant difference in locus attribution between the FTS and NTS groups (p=.28).

Thought speed also affected internal locus attribution (F(2, 102)=3.88, p<.05), converging with results from the previous paragraph: participants from the FTS condition reported less internal attribution than participants from the STS condition (M_{fast}=3.26, SD_{fast}=1.59, M_{slow}=4.27, SD_{slow}=1.49, p=.01). Participants from the NTS condition also reported less internal attribution than participants from the STS condition (M_{normal}=3.49, SD_{normal}=1.57, p<.05). And again there was no significant difference between the FTS and NTS groups (p=.54).

Thought speed also affected internal controllability attribution (F(2, 102)=3.52, p<.05): participants from the FTS condition reported less internal controllability than participants from the STS condition (M_{fast}=4.00, SD_{fast}=1.63, M_{slow}=4.97, SD_{slow}=1.19, p=.01). The difference between the NTS and STS conditions was marginally significant (p=.09), with participants from the NTS condition reporting slightly less internal controllability than participants from the STS condition (M_{normal}=4.37, SD_{normal}=1.58). There was no significant difference between the FTS and NTS groups (p=.30).

There was no effect of thought speed on the remaining variables of the study:

- Repurchase (F(2, 102)=.13, p=.88)
- Complaint (F(2, 102)=.43, p=.65)
- NWOM (F(2, 102)=.39, p=.68)
- State performance self-esteem (F(2, 102)=.49, p=.61)
- State social self-esteem (F(2, 102)=.36, p=.70)
- The sum of the state performance and social self-esteem scales (F(2, 102)=.50, p=.61)
- Pleasure at the moment (F(2, 102)=1.28, p=.28)
- Arousal at the moment (F(2, 102)=2.23, p=.11)

- Dominance at the moment ($F(2, 102)=.26$, $p=.77$)

The behavioral intentions were not affected by thought speed, but the theoretical and empirical contents of chapter 3 – chapter about the temporal model of perceived control – show that behavioral intentions may be affected by cognitive and emotional reactions. Thus, multiple regression analysis was conducted to check whether locus attribution, pleasure, arousal, and dominance could be related to repurchase, complaint, and NWOM intentions. Results show that locus attribution was positively related to repurchase ($t=2.06$, $\beta=.20$, $p<.05$) – the less external the attribution, the higher the intention to repurchase – and negatively related to NWOM intention ($t=-2.62$, $\beta=-.25$, $p=.01$) – the more external the attribution, the higher the intention to engage in NWOM. Locus attribution was not significantly related to complaint intention, while pleasure, arousal, and dominance were unrelated to any of the behavioral intentions.

There were differences in participants' thought speed levels at the end of the questionnaire ($F(2, 102)=12.17$, $p<.001$). Participants from the FTS condition reported to be thinking faster than participants from the STS condition ($M_{fast}=5.94$, $SD_{fast}=1.18$, $M_{slow}=4.33$, $SD_{slow}=1.41$, $p<.001$) and NTS condition ($M_{normal}=4.80$, $SD_{normal}=1.38$, $p=.001$). But there was no significant difference in thought speed between participants from the NTS and STS condition ($p=.13$).

Paired samples t test using the two measures of thought speed (i.e., right after the manipulation and at the end of the questionnaire) shows that the thought speed of participants from the STS condition became significantly faster during the questionnaire ($t=-3.07$, $p<.01$), converging with the result from study 3. The thought speed of participants from both the NTS ($t=-.42$, $p=.68$) and FTS ($t=.55$, $p=.59$) conditions did not change during the questionnaire. The same happened with FTS condition in study 3.

Different from studies 2 and 3, the average time that participants from the experimental groups spent on each page of the questionnaire varied. On most of the pages, the time spent by participants from the STS condition was longer than the time spent by participants from the FTS and NTS conditions. There was a marginally significant difference ($F(2, 102)=2.72$, $p=.07$) on the first page after the manipulation (i.e., the page of the thought speed manipulation check), such that participants from the STS condition spent more time on this page ($M=24$ seconds, $SD=13$ seconds) than participants from the FTS ($M=19$ seconds, $SD=6$ seconds, $p=.06$) and NTS ($M=19$ seconds, $SD=10$ seconds, $p<.05$) conditions. There was no difference between the FTS and NTS conditions ($p=.96$). There were differences ($F(2, 102)=3.92$, $p<.05$) in thought speed on the second page after the manipulation (i.e., the page checking whether participants

understood the service failure). Participants from the STS condition spent more time on this page (M=18 seconds, SD=12 seconds) than participants from the FTS (M=12 seconds, SD=3 seconds, p<.05), which in turn spent less time on the page than participants from the NTS condition (M_{normal}=17 seconds, SD=10 seconds, p<.05). There was no significant difference between the STS and NTS conditions (p=.78).

There were differences (F(2, 102)=10.48, p<.001) in the time spent on the third page after the manipulation (i.e., page about causal locus), with participants from the STS condition spending more time on the page (M=14 seconds, SD=6 seconds) than participants from the NTS (M=11 seconds, SD=4 seconds, p<.01) condition, which in turn spent more time on the page than participants from the FTS condition (M=9 seconds, SD=2 seconds, p=.05). There were differences (F(2, 102)=8.45, p<.001) in the time spent on the fourth page after the manipulation (i.e., page about internal locus and controllability), with participants from the STS condition spending more time on the page (M=16 seconds, SD=6 seconds) than participants from the FTS (M=11 seconds, SD=3 seconds, p<.001) and NTS (M=13 seconds, SD=4 seconds, p<.01) conditions. No difference between FTS and NTS (p=.18).

There were differences (F(2, 102)=9.85, p<.001) in the time spent on the fifth page after the manipulation (i.e., page about behavioral intentions), with participants from the STS condition spending more time on the page (M=25 seconds, SD=8 seconds) than participants from the FTS (M=18 seconds, SD=5 seconds, p<.001) and NTS (M=20 seconds, SD=7 seconds, p=.001) conditions. No difference between FTS and NTS (p=.27). Similarly, there were differences (F(2, 102)=7.65, p=.001) in the time spent on the sixth page after the manipulation (i.e., page about self-esteem), with participants from the STS condition spending more time on the page (M=72 seconds, SD=21 seconds) than participants from the FTS (M=57 seconds, SD=12 seconds, p<.001) and NTS (M=61 seconds, SD=14 seconds, p<.01) conditions. No difference between FTS and NTS (p=.26).

There was no difference (F(2, 102)=1.78, p=.17) in the time spent on the seventh page after the manipulation (i.e., page about pleasure, arousal, and dominance). But there were differences again on the eighth (F(2, 102)=6.84, p<.01) and ninth (F(2, 102)=4.51, p<.01) pages after the manipulation (i.e., the pages measuring thought speed at the end of the questionnaire and perceptions about the required thinking and reading pace, respectively). On the eighth page, the time spent by participants from the STS condition was longer (M=12 seconds, SD=5 seconds) than the FTS condition (M=8 seconds, SD=3 seconds, p<.001) but equivalent to the NTS condition (M=10 seconds, SD=8 seconds, p=.11). The difference between FTS and NTS was significant (p<.05). The same pattern was true for the ninth page: longer time for STS than

FTS (M_{slow}=22 seconds, SD_{slow}=7 seconds vs. M_{fast}=17 seconds, SD_{fast}=4 seconds, p>.01), equivalent time between STS and NTS (M_{normal}=20 seconds, SD_{normal}=6 seconds, p=.24), and significant difference between FTS and NTS (p=.05).

We did not compare the total time each experimental group took to complete the questionnaire because the manipulation length varied across the groups. Therefore, differences in the total time to answer the questionnaire could be due to the differences in the manipulation length rather than thought or reading speed. But we did compare the sum of the time spent on the nine pages after the manipulation and there were significant differences (F(2, 102)=13.61, p<.001). Participants from the STS condition spent more time on the nine pages after the manipulation than participants from the NTS condition (M_{slow}=226 seconds, SD_{slow}=50 seconds vs. M_{normal}=194 seconds, SD_{normal}=40 seconds, p=.001), which in turn spent more time on the nine pages than participants from the FTS condition (M=173 seconds, SD=31 seconds, p<.05).

Table 53 compares the time spent on each page by indicating whether participants from a given experimental condition spent more (>), less (<), or the same time (=) on the page than participants from another experimental condition.

Table 53 – Comparison of the time spent on each questionnaire page

Order after the manipulation	Time spent on the page		
	STS vs. FTS	**STS vs. NTS**	**NTS vs. FTS**
1st page	STS > FTS	STS > NTS	NTS = FTS
2nd page	STS > FTS	STS = NTS	NTS > FTS
3rd page	STS > FTS	STS > NTS	NTS > FTS
4th page	STS > FTS	STS > NTS	NTS = FTS
5th page	STS > FTS	STS > NTS	NTS = FTS
6th page	STS > FTS	STS > NTS	NTS = FTS
7th page	STS = FTS	STS = NTS	NTS = FTS
8th page	STS > FTS	STS = NTS	NTS > FTS
9th page	STS > FTS	STS = NTS	NTS > FTS
Sum of the 9 pages	STS > FTS	STS > NTS	NTS > FTS

A multiple regression with causal locus as dependent variable and pleasure, arousal, dominance, and the two state self-esteem subscales as independent variables revealed that none of these latter variables could explain variances in the former (R^2=.01, t<|.50|, β<|.07|, p>.60).

As for the last items of the questionnaire used to check participants' perceptions about the required pace, there were differences in the ability to maintain the required pace during the questionnaire (F(2, 102)=4.32, p<.05): participants from the STS condition reported they were

less able to keep the pace (M=2.85, SD=1.18) than participants from the NTS (M=3.34, SD=1.02, p=.05) and FTS (M=3.61, SD=.99, p<.01) conditions. There was a marginally significant effect of thought speed on the extent to which they liked to follow the required pace (F(2, 102)=2.86, p=.06): participants from the FTS condition (M=2.94, SD=1.03) reported they liked to follow the required pace more than participants from the STS condition (M=2.30, SD=1.33, p<.05). There were no significant differences between FTS and NTS (p=.43) and between STS and NTS (p=.10). There were differences regarding reading and thinking speed preference (F(2, 102)=11.01, p<.001): participants from the STS condition (M=4.42, SD=.66) reported higher preference for another thought speed (i.e., different from the one they were required to adopt) than participants from the NTS (M=3.56, SD=1.03, p<.001) and FTS (M=3.45, SD=1.03, p<.001) conditions. No difference between FTS and NTS (p=.62). Finally, there was no difference in the extent to which they could concentrate better in the required pace (p=.24).

5.6.3 Discussion

Before running this study, we were concerned with the potential implications of the chosen manipulation. The first concern was whether the fast pace of the sentences in the FTS condition would impair participants' understanding of the service failure. However, the fact that the STS and FTS conditions had basically the same number of incorrect answers regarding the content of the service failure (13 and 14, respectively) suggests that the fast pace of the latter condition did not impair participants' understanding.

The second concern was whether telling participants that they should keep a fast/normal/slow thinking and reading pace would generate demand artifact, making participants report the required thought speed even if it was not their true thought speed in that moment. But there are two evidence suggesting that the thought speed manipulation indeed worked: first, thought speed had a significant effect on causal locus, internal locus, and internal controllability attributions. Even if the participants wanted to report a given thought speed only to comply with the research, it is very unlikely that they could imagine how they should react to the attribution questions to comply with this part too. That is to say, it is unlikely that they thought something like "if I am thinking fast, I must answer that the cause of the failure was…" Thus, the effect on causal locus attribution should be due to real differences in thought speed.

Second, there were significant differences in the time that participants spent on the questionnaire pages: participants from the STS condition spending more time on the pages than participants from the NTS condition, which in turn spent more time on the pages than participants from the FTS condition. This indicates that participants were indeed keeping the required pace.

The results from this study indicates that thought speed affects causal locus attribution in the direction suggested by H2: FTS leading to more external attribution than STS. This direction converges with the marginally significant effect found in study 1. Actually, the fact that there was no difference in locus (and internal locus) attribution between the FTS and the NTS groups (i.e., only attributions from the STS group differed from the NTS group) suggests that STS could be leading to less external attribution rather than FTS leading to more external attribution.

Thought speed had no effect on self-esteem, pleasure, arousal, and dominance, which are the variables that were expected to explain why thought speed affects locus attribution in this direction. Besides, self-esteem, pleasure, arousal, and dominance had no effect on locus attribution, another strong evidence that they could not help to explain the results concerning locus attribution in this study.

Judging by the differences in reported thought speed throughout the questionnaire and the time spent on the questionnaire pages, the differences in induced thought speed lasted longer than in studies 2 and 3. This could explain why we found the effect of thought speed on locus attribution here but not in these previous studies. Another explanation could be the smaller sample size from studies 2 (n=84) and 3 (n=53), hampering the observation of significant effects.

In spite of the evidence of longer differences in thought speed in this study, it seems that these differences are short-lived and that there is a tendency to return to a normal thought speed. Participants' reported thought speed became significantly faster during the questionnaire in the STS condition and there was no difference in reported thought speed at the end of the questionnaire between participants from the STS and NTS condition. This, together with the fact that participants from the STS condition reported they were less able to maintain the required pace than participants from the other conditions, suggests a tendency to return to a normal thought speed – at least for participants from the STS condition. To some extent this difficulty in keeping the slow pace may be due to the fact that the study was conducted in a laboratory with students. These students may be motivated to finish the questionnaire as soon

as possible, because the faster they answer the questionnaire, the sooner they will leave the laboratory.

A longer but still short-lived difference in thought speed – and a consequently short-lived effect of thought speed on other variables – could explain why only causal attribution (i.e., one of the first items after the manipulation) was affected by thought speed. Although thought speed had no effect on behavioral intentions, it affected locus attribution, which in turn affected repurchase and NWOM intentions. This is an extra motivation to care about the potential effects of thought speed on locus attribution.

5.7 GENERAL DISCUSSION

While the results from studies 1 and 4 converge about the effect of thought speed on locus attribution, there was no evidence of significant effect in studies 2 and 3. We discussed during this chapter that the lack of significant effects in studies 2 and 3 could be due to a short-lived difference in thought speed as well as a small sample size. Therefore, in study 4 we tried to make the differences in thought speed last longer and increased the sample size, which led to a significant result.

We have evidence supporting that FTS leads to more external attribution for a service failure than STS – or maybe it is the STS that leads to less external attribution, as suggested by study 4 – but there is no evidence explaining the mechanism behind this effect. Based on studies from Pronin and colleagues, we expected to find higher self-esteem and positive affect for FTS than STS and these variables would then explain the effects of thought speed on causal locus attribution. But, overall, the four studies do not support findings from Pronin and colleagues about self-esteem and positive affect. We deliberately changed the measures of self-esteem and positive affect across the studies in an effort to rule out that the explanation for the lack of support was the choice of a specific measure. Thought speed affected arousal during the manipulation in studies 2 and 3, but not arousal afterwards (at the moment, during the questionnaire). Thought speed also affected dominance during the manipulation in study 2 and pleasure afterwards (at the moment, during the questionnaire) in study 3, but in both cases, the direction of the effect was opposed to the expected based on Pronin and colleagues (i.e., the FTS group reported lower levels of pleasure and dominance than the STS group). But there was

no effect at all on self-esteem/self-integrity across the studies and on positive affect, pleasure, arousal, and dominance in studies 1 and 4.

While a potential short-lived difference in thought speed or its effects could explain the lack of effects on self-esteem and positive affect, it certainly does not explain the inconsistent results regarding whether and how these latter variables relate to locus attribution. For instance, self-esteem was significantly related to locus attribution in study 1, in the same direction indicated by the self-threat rationale used to formulate H2, while it was unrelated to locus attribution in study 4. Self-integrity (i.e., the measure used in studies 2 and 3 to substitute self-esteem) was also unrelated to locus attribution in study 2, while it was related to locus in study 3, but in the opposite direction from study 1 (i.e., in the same direction indicated by the rationale used to formulate H1). As for positive affect, arousal at the moment (i.e., a substitute for positive affect) was related to locus attribution in study 3, in the same direction of the self-threat rationale used to formulate H2, but no other measure of positive affect was related to locus attribution throughout the studies. Negative affect, in turn, was related to locus attribution in two out of the three studies in which it was measured: the higher the negative affect, the less external the attribution, which also converges with the rationale behind H2. But negative affect was not affected by thought speed. So, it cannot be used as an explanation for the effect of thought speed on locus attribution.

Manipulations were effective in the four studies, leading participants to experience faster/slower thoughts during the manipulation. But all studies have results that suggest that the differences in thought speed were not sustained during the questionnaire. Even in study 4 – which was designed to make the differences in thought speed last longer – there was evidence that these differences were becoming smaller during the questionnaire: participants from the STS condition reported significantly faster thought speed at the end of the questionnaire, becoming equivalent to participants from the NTS condition in thought speed. Therefore, it seems unlikely that induced thought speed will last enough time to influence a great number of customer reactions after a service failure.

5.7.1 Implications

Regarding potential managerial implications, the results suggest that, in case of service failures, service providers could benefit from inducing STS among their customers. Since STS

seems to lead to reduced external attribution to service failures, service providers could stimulate slow thoughts during the service recovery, for example. This could be done through visual and auditory stimulus in the service environment, such as videos with slow moving images and slow pace music. But we have seen that although customers may think faster or slower when watching a promotional material or other visual stimuli, this acceleration or deceleration is not likely to be sustained. Therefore, service providers who want to slow down customers' thoughts during service recovery could try to keep a STS stimulus for the entire service recovery process (or for as long as they can).

However, while we do not understand the mechanism behind the effect of thought speed on locus attribution, it is difficult to be sure whether it is the FTS that leads to more external attribution or the STS that leads to less external attribution. Without this understanding, it is difficult to choose between recommending service providers to (1) stimulate a slow thought pace, slowing down customers' thought or (2) stimulate a normal thought pace, avoiding to speed up customers' thoughts.

From a theoretical point of view, this research contributes by providing evidence that the effects of induced thought speed are short lived. This has implications on other findings about thought speed. It suggests that all the potential positive consequences of induced thought speed (e.g., positive affect and high self-esteem) are ephemeral.

5.7.2 Limitations and suggestions for future studies

The fact that the four experiments from this chapter induced differences in thought speed that were not sustained for long does not mean that effects of thought speed will be always short-lived. Although different manipulations were used, varying the content of the message from daily activities of a student and trivia sentences to a promotional material of a car retailer and a service failure, only visual stimuli were used. But thought speed could perhaps be manipulated with other stimuli. For instance, giving participants a short (vs. long) period of time to do a task could make them think faster (slower) due to differences in time pressure. Also, an auditory stimulus could be used, such as fast (vs. slow) pace music. Music affects customer cognitions, such as perception of waiting time (Oakes & North, 2008), emotions (Bruner, 1990), and behaviors, such as the time and money they spent (Milliman, 1982, 1986).

Music could also influence customers' thought speed and its effect could last longer (or shorter) than effects of thought speed induced by visual stimuli.

The empirical studies of this chapter were restricted to differences in thought speed induced by the manipulations. But some individuals may naturally think faster than others, without any manipulation. There are individual differences regarding thought speed, which may affect some of our perceptions, such as the subjective experience of time (Allman, Teki, Griffiths, & Meck, 2014). The fact that people think in different paces is clear even in clinical literature, as racing thoughts – the acceleration of thoughts to a pathological level – is one symptom of mania (Piguet et al., 2010). Effects of individuals' natural or inherent thought speed were not investigated. And while induced differences on thought speed may last for a short period, individual differences in thought speed are likely to be sustained if we consider them as personal trait or tendency. Future studies could investigate the effects of such natural thought speed on causal locus attributions and other customers' reactions to service failures.

The empirical studies of this chapter were also restricted to service failure contexts. But causal attributions are not meant to be used only in a service or product consumption context. They may be investigated in other interpersonal relationships such as problems with family, friends, working colleagues, etc. Future studies could investigate the potential effects of thought speed on causal attributions for situations that are not restricted to service failures. For instance, when participants are paired to each other to do a task and they fail, will differences in thought speed influence their causal locus attribution for this failure?

The current studies manipulated thought speed before and during the service failure, but future studies could try to manipulate thought speed after the service failure. If thought speed could have any influence on customers' cognitive, emotional, or behavioral reactions to a service failure when manipulated post factum, it could be useful for the context of service recovery. Since the effects of thought speed seems to be short-lived, manipulating thought speed after a service failure could lead to effects that were not observable when manipulating it before the failure.

6 CONCLUSIONS

The aim of this doctoral dissertation is to better understand some of the customers' cognitive, emotional, and behavioral reactions to service failures. Because service failures are ubiquitous, knowing how customers react to such failures may help to predict and even influence customers' reactions. By understanding what customers think (cognitive reactions), how they feel (emotional reactions), and what they do (behavioral reactions) after service failures, it is possible to adopt tactics to reduce their negative reactions. Previous research has long investigated customers' reactions to service failures, but this doctoral dissertation addresses some elements that have not been considered by previous research, such as a temporal model of perceived control, failed co-produced services which causal locus is uncertain, and thought speed. Next section summarizes the findings of each chapter.

6.1 RECAPITULATION OF THE FINDINGS

Chapter 3 showed a comparison among three different models of cognitive reactions to service failure: the causal attribution model, the appraisal model, and the temporal model of perceived control. Results show that the temporal model of perceived control – the model that has not been used in service research – may outperform the attribution and appraisal models to explain some customer's emotional and behavioral reactions to service failures. But some of the emotional and behavioral reactions investigated in the chapter were better explained by attributions and appraisals than perceived control. In face of these results, it would be wise to neither discard this temporal model nor use it as a substitute of attributions and appraisals, but rather combine it with these latter models.

In chapter 4, failed co-produced services were investigated. It was found that co-production may influence customers' cognitive reactions, reducing external attributions for services failures. It was also found that co-production may affect customers' emotional reactions, reducing disappointment and dissatisfaction. These findings show that firms that adopt co-production have more beneficial results than firms that do not adopt it when service failures occur, because the former are less blamed by the customer. Customers have more beneficial results as well with failed co-produced services (vs. failed services that were not co-

produced): they feel less dissatisfied without necessarily being more regretful than customers who did not co-produce. Results encourage service firms to adopt co-production.

In chapter 5, potential effects of thought speed on customers' cognitive (i.e., locus attribution and self-esteem), emotional (i.e., positive affect, negative affect, pleasure, etc.), and behavioral (i.e., repurchase, complaint, and negative word-of-mouth) reactions to service failure were investigated. Results suggest that slow thought speed leads to less external attribution for a service failure than fast thought speed. It was found that the differences in induced thought speed are difficult to be sustained for a long period though. There is no strong evidence that thought speed could impact other customers' reactions to service failures.

6.2 IMPLICATIONS

Theoretical and managerial implications were presented at the end of each chapter. Although the chapters share a common subject – causal attributions for service failures – they also approach very diverse subjects such as the temporal model of perceived control and thought speed. Therefore, discussing implications at the end of each chapter seems to facilitate the comprehension of such implications before changing the mindset to a different research focus. Let's recapitulate implications from each chapter.

Theoretical implications from chapter 3 refer to broadening the scope of service research by showing that it is possible (and useful) to look at the role that customers play in a stressful service failure (i.e., customer's perceived control) in a temporal dimension (i.e., before or after the service failure). The temporal model of perceived control may complement the attribution and appraisal models in service research to better understand customers' reactions to service failure. Managerial implications refer to the knowledge that service providers have different types of control they may influence in order to get the less harmful emotional and behavior reactions from customers after service failures. Having different types of control in a temporal dimension (i.e., past, present, and future control) probably implies that service providers have different moments to increase or decrease customers' perceived control. Although how and when service providers may affect customers' perceived control has not been empirically investigated during the chapter, it seems logical to expect that increasing customers' perceived control before the service failure could impact perceived past control, while increasing customers' perceived control after the service failure could impact perceived present and future

control (as well as future likelihood). But some of the results suggest that increasing customers' perceived control may not be such a good idea for every type of control from the temporal model. For instance, high perceived future control is associated with high levels of anger and NWOM.

Theoretical implications from chapter 4 refer to benefits of failed co-produced services versus failed services that were not co-produced: lower external attribution (benefit for the service provider) and reduced levels of disappointment and dissatisfaction (benefit for both customer and service provider). Previous studies have shown negative effects of failed co-produced service, such as higher external attribution (Jong-Kuk et al. 2010; Yen et al., 2004) – which is negative for the service provider – and lower customer dissatisfaction (Heidenreich et al., 2015) – which is negative for both customer and service provider. Also, the results from chapter 4 contradict the literature on causal uncertainty showing that causal uncertainty does not necessarily leads to reduced emotional intensity in case of failed co-produced services. Thus, researchers should be aware that causal uncertainty may have different effects in case of failed co-produced services. Managerial implications refer to the evidence that service providers could adopt co-production to reduce customer's negative reactions to service failures, such as blaming the service provider, feeling disappointed and dissatisfied.

Theoretical implications from chapter 5 refer to (1) the effect of thought speed on causal locus attribution and (2) the short duration of thought speed differences caused by thought speed manipulation. While studies show that the acceleration of thought speed via reading tasks or videos may increase positive mood and risk taking (Chandler & Pronin, 2012; Pronin et al., 2008; Pronin, 2013; Yang et al., 2014), such benefits of thought acceleration may be short-lived as thought speed tends to go back to normal in a few minutes or seconds, as suggested by studies from chapter 5. As a managerial implication, service providers could benefit from inducing slow thought speed among customers, which tends to reduce external attribution for a service failure, as long as they manage to sustain this induced slow thought. This could be especially useful in service recovery. The next section recapitulates limitations and suggestions for future research.

6.3 LIMITATIONS AND FUTURE RESEARCH

Similar to implications, limitations and suggestions for future research were also discussed at the end of each chapter. In chapter 3, it was acknowledged that the studies reported did not investigate every possible emotional and behavioral reactions customers may have after a stressful service failure – although a large variety of reactions was assessed. Neither was investigated every interaction that the temporal model of perceived control could have with the attribution or appraisal models (e.g., future control and locus attribution, present control and future expectancies, etc.). No modification of the original model was done to adapt the temporal dimension to the service failure context, such as measuring what customers could do in the present to correct or mitigate the consequences of the service failure. Future studies could address such subjects that were not part of the investigations from chapter 3.

In chapter 4, limitations refer to the fact that the studies do not solve the literature inconsistency on whether co-production leads to more internal or external causal locus attribution, do not measure some variables that could be explaining the findings from the chapter (e.g., customer perceived control and effort), do not investigate effects of uncertain locus attribution to both co-produced and no co-produced services, and investigate effects on the most obvious emotional reactions (i.e., regret and disappointment). Future studies could measure potential mediators and moderators as well as address effects on emotions that were not part of our investigation. A meta-analysis could also be conducted in order to solve the literature inconsistency.

In chapter 5, limitations refer to using only visual stimuli to manipulate thought speed, investigating only differences in thought speed induced by manipulations rather than individual (natural or inherent) differences in thought speed, and restricting the studies to service failure contexts. Future studies could address such things that were not investigated in chapter 5 to have a better understanding about the potential effects of thought speed on causal attributions.

None of the chapters investigated whether a specific type of service failure could influence the obtained results. There are different classification schemes for types of service failures, such as: outcome vs. process; monetary vs. non-monetary; reversible vs. irreversible; flawed goods, failed service, and lack of attention (Roschk & Gelbrich, 2013). Future studies could investigate whether results from chapters 3, 4, and 5 apply only for some types of failures.

REFERENCES

Aaker, D. A., Stayman, D. M., & Vézina, R. (1988). Identifying Feelings Elicited by Advertising. *Psychology & Marketing*, *5*(1), 1–16.

Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology*, *87*(1), 49–74. http://doi.org/10.1037/0021-843X.87.1.49

Allman, M. J., Teki, S., Griffiths, T. D., & Meck, W. H. (2014). Properties of the internal clock: first- and second-order principles of subjective time. *Annual Review of Psychology*, *65*(January), 743–71. http://doi.org/10.1146/annurev-psych-010213-115117

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

Anderson, R. E. (1973). Consumer Dissatisfaction: The Effect of Disconfirmed Expectancy on Perceived Product Performance. *Journal of Marketing Research*, *10*(1), 38–44.

Asghar, S. J., Tanay, V. A. M. I., Baker, G. B., Greenshaw, A., & Silverstone, P. H. (2003). Relationship of plasma amphetamine levels to physiological, subjective, cognitive and biochemical measures in healthy volunteers. *Human Psychopharmacology*, *18*(4), 291–299. http://doi.org/10.1002/hup.480

Atakan, S. S., Bagozzi, R. P., & Yoon, C. (2014). Consumer participation in the design and realization stages of production: How self-production shapes consumer evaluations and relationships to products. *International Journal of Research in Marketing*, *31*(4), 395–408. http://doi.org/10.1016/j.ijresmar.2014.05.003

Au, K., Hui, M. K., & Leung, K. (2001). Who Should Be Responsible? Effects of Voice and Compensation on Responsibility Attribution, Perceived Justice, and Post-Complaint Behaviors Across Cultures. *International Journal of Conflict Management*, *12*(4), 350–364. http://doi.org/10.1108/eb022863

Averill, J. R. (1973). Personal control over aversive stimuli and its relationship to stress. *Psychological Bulletin*, *80*(4), 286–303.

Averill, J. R. (1983). Studies on Anger and Aggression: Implications for Theories of Emotion, *American Psychologist*, *38*(11), 1145–1160.

Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, *27*(2), 184-206.

Bárez, M., Blasco, T., Fernández-Castro, J., & Viladrich, C. (2009). Perceived control and psychological distress in women with breast cancer: A longitudinal study, *Journal of Behavioral Medicine*, *32*(2), 187–196. http://doi.org/10.1007/s10865-008-9180-5

Barrowclough, C., & Hooley, J. M. (2003). Attributions and expressed emotion: A review. *Clinical Psychology Review*, *23*(6), 849–880. http://doi.org/10.1016/S0272-7358(03)00075-8

Bendapudi, N., & Leone, R. P. (2003). Psychological Implications of Customer Participation in Co-Production. *Journal of Marketing*, *67*(1), 14–28.

Bitner, M. J. (2014). Editorial: A Vision for the Future of the Journal of Service Research (JSR).

Journal of Service Research, *17*(1), 3–4. http://doi.org/10.1177/1094670513511750

Bolkan, S., Goodboy, A. K., & Daly, J. A. (2010). Consumer Satisfaction and Repatronage Intentions Following a Business Failure: The Importance of Perceived Control with an Organizational Complaint. *Communication Reports*, *23*(1), 14–25. http://doi.org/10.1080/08934211003598767

Bonifield, C., & Cole, C. (2007). Affective to service failure: Anger, regret, and retaliatory versus conciliatory responses, *Marketing Letters, 18*(1), 85–99.

Bougie, R., Pieters, R., & Zeelenberg, M. (2003). Angry Customers Don ' t Come Back , They Get Back: The Experience and Behavioral Implications of Anger and Dissatisfaction in Services. *Journal of the Academy of Marketing Science, 31*(4), 377–393. http://doi.org/10.1177/0092070303254412

Brisswalter, J., Collardeau, M., & René, A. (2002). Effects of Acute Physical Exercise Characteristics on Cognitive Performance. *Sports Medicine*, *32*(9), 555–566.

Bruner, G. C. (1990). Music, mood, and marketing. *Journal of Marketing*, *54*(4), 94–104.

Burger, J. M. (1989). Negative reactions to increases in perceived personal control. *Journal of Personality and Social Psychology*, *56*(2), 246–256. http://doi.org/10.1037/0022-3514.56.2.246

Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic intergration. *Review of General Psychology*, *3*(1), 23–43.

Caouette, J., Wohl, M. J. A., & Peetz, J. (2012). The future weighs heavier than the past: Collective guilt, perceived control and the influence of time. *European Journal of Social Psychology*, *42*(3), 363–371. http://doi.org/10.1002/ejsp.1857

Chan, K. W., Yim, C. K. (Bennett), & Lam, S. S. K. (2010). Is Customer Participation in Value Creation a Double-Edged Sword? Evidence from Professional Financial. *Journal of Marketing*, *74*(3), 48–64. http://doi.org/http://dx.doi.org/10.1509/jmkg.74.3.48

Chandler, J. J., & Pronin, E. (2012). Fast Thought Speed Induces Risk Taking. *Psychological Science*, *23*(4), 370–374. http://doi.org/10.1177/0956797611431464

Chang, C.-C. (2008). Choice, perceived control, and customer satisfaction: the psychology of online service recovery. *Cyberpsychology & Behavior*, *11*(3), 321–328. http://doi.org/10.1089/cpb.2007.0059

Cho, Y. C., & Song, J. (2012). The Effects Of Customer Dissatisfaction On Switching Behavior In The Service Sector. *Journal of Business & Economics Research*, *10*(10), 579–592.

Choi, S., & Mattila, A. S. (2008). Perceived controllability and service expectations: Influences on customer reactions following service failure. *Journal of Business Research*, *61*(1), 24–30. http://doi.org/10.1016/j.jbusres.2006.05.006

Chu, W., Song, M. R., & Choi, B. (2013). Post-purchase disadvantages of a less preferred brand and how they can be overcome: An examination of regret and attribution. *Journal of Applied Social Psychology*, *43*(4), 887–898. http://doi.org/10.1111/jasp.12014

Chwalisz, K., Altmaier, E. M., & Russell, D. W. (1992). Causal Attributions, Self-efficacy cognitions, and Coping with Stress. *Journal of Social and Clinical Psychology*, *11*(4), 377–400.

Clark, L., Iversen, S. D., & Goodwin, G. M. (2001). The influence of positive and negative

mood states on risk taking, verbal fluency, and salivary cortisol. *Journal of Affective Disorders*, *63*(1-3), 179–187.

Clore, G. L., Ortony, A., & Foss, M. A. (1987). The Psychological Foundations of the Affective Lexicon. *Journal of Personality and Social Psychology*, *53*(4), 751–766.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. http://doi.org/10.2307/2136404

Coleman, M. D. (2011). Emotion and the Self-Serving Bias. *Current Psychology*, *30*(4), 345–354. http://doi.org/10.1007/s12144-011-9121-2

Dabholkar, P. A., & Sheng, X. (2009). The role of perceived control and gender in consumer reactions to download delays. *Journal of Business Research*, *62*(7), 756–760. http://doi.org/10.1016/j.jbusres.2008.06.001

Dabholkar, P. A., & Spaid, B. I. (2012). Service failure and recovery in using technology-based self-service: effects on user attributions and satisfaction. *The Service Industries Journal*, *32*(9), 1415–1432. http://doi.org/10.1080/02642069.2011.600518

Dedonno, M. A., & Demaree, H. A. (2008). Perceived time pressure and the Iowa Gambling Task. *Judgment and Decision Making*, *3*(8), 636–640.

Dellaert, B. G. C., & Dabholkar, P. A. (2009). Increasing the Attractiveness of Mass Customization: The Role of Complementary On-line Services and Range of Options, *International Journal of Electronic Commerce*, *13*(3), 43–70. http://doi.org/10.2753/JEC1086-4415130302

Duhachek, A. (2005). Coping: A multidimensional, hierarchical framework of responses to stressful consumption episodes. *Journal of Consumer Research*, *32*(1), 41-53.

Dunn, L., & Dahl, D. W. (2012). Self-Threat and Product Failure: How Internal Attributions of Blame Affect Consumer Complaining Behavior. *Journal of Marketing Research*, *49*(5), 670–681. http://doi.org/10.1509/jmr.11.0169

Etgar, M. (2008). A descriptive model of the consumer co-production process. *Journal of the Academy of Marketing Science*, *36*(1), 97–108. http://doi.org/10.1007/s11747-007-0061-1

Fliess, S., Dyck, S., & Schmelter, M. (2014). Mirror, mirror on the wall – how customers perceive their contribution to service provision. *Journal of Service Management*, *25*(4), 433–469. http://doi.org/10.1108/JOSM-09-2013-0266

Folkes, V. S. (1984). Consumer Reactions to Product Failure: An Attributional Approach. *Journal of Consumer Research*, *10*(4), 398–409. http://doi.org/10.1086/208978

Folkes, V. S., Koletsky, S., & Graham, J. L. (1987). A Field Study of Causal Inferences and Consumer Reaction: The View from the Airport. *Journal of Consumer Research*, *13*(4), 534. http://doi.org/10.1086/209086

Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology*, *54*(3), 466–475. http://doi.org/10.1037/0022-3514.54.3.466

Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a Stressfull encounter: Cognitive Appraisal, Coping, and Encounter Outcomes. *Journal of Personality and Social Psychology*, *50*(5), 992–1003.

Folkman, S., Lazarus, R. S., Gruen, R. J., & Delongis, A. (1986). Appraisal, Coping, Health

Status, and Psychological Symptoms. *Journal of Personality and Social Psychology*, *50*(3), 571–579.

Frazier, P. (2003). Perceived control and distress following sexual assault: a longitudinal test of a new model. *Journal of Personality and Social Psychology*, *84*(6), 1257–1269. http://doi.org/10.1037/0022-3514.84.6.1257

Frazier, P., Anders, S., Shallcross, S., Keenan, N., Perera, S., Howard, K., & Hintz, S. (2012). Further development of the temporal model of control. *Journal of Counseling Psychology*, *59*(4), 623–30. http://doi.org/10.1037/a0029702

Frazier, P., Berman, M., & Steward, J. (2001). Perceived control and posttraumatic stress: A temporal model. *Applied and Preventive Psychology*, *10*(3), 207–223. http://doi.org/10.1016/S0962-1849(01)80015-9

Frazier, P., Keenan, N., Anders, S., Perera, S., Shallcross, S., & Hintz, S. (2011). Perceived past, present, and future control and adjustment to stressful life events. *Journal of Personality and Social Psychology*, *100*(4), 749–65. http://doi.org/10.1037/a0022405

Frijda, N. H. (1988). The laws of emotion. *The American Psychologist*, *43*(5), 349–58.

Frijda, N. H., Mesquita, B., Sonnemans, J., & Van Goozen, S. (1991). The duration of affective phenomena or emotions, sentiments and passions. In K. T. Strongman (Ed.), *International review of studies on emotion* (pp. 187-225). New York: John Wiley & Sons Ltd.

Fu, H., Wu, D. C., Huang, S. S., Song, H., & Gong, J. (2015). Monetary or nonmonetary compensation for service failure? A study of customer preferences under various loci of causality. *International Journal of Hospitality Management*, *46*(April), 55–64. http://doi.org/10.1016/j.ijhm.2015.01.006

Gagnon, L., & Peretz, I. (2003). Mode and tempo relative contributions to "happy-sad" judgements in equitone melodies. *Cognition & Emotion*, *17*(1), 25–40. http://doi.org/10.1080/02699930302279

Geer, J. H., Davison, G. C., & Gatchel, R. I. (1970). Reduction of stress in humans through nonveridical perceived control of aversive stimulation. *Journal of Personality and Social Psychology*, *16*(4), 731–738. http://doi.org/10.1037/h0030014

Gerstorf, D., Röcke, C., & Lachman, M. E. (2010). Antecedent – Consequent Relations of Perceived Control to Health and Social Support: Longitudinal Evidence for Between-Domain Associations Across Adulthood. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *66B*(1), 61–71.

Golder, P. N., Mitra, D., & Moorman, C. (2012). What Is Quality? An Integrative Framework of Processes and States. *Journal of Marketing*, *76*(4), 1–23.

Grégoire, Y., Laufer, D., & Tripp, T. M. (2010). A comprehensive model of customer direct and indirect revenge: Understanding the effects of perceived greed and customer power. *Journal of the Academy of Marketing Science*, *38*(6), 738–758. http://doi.org/10.1007/s11747-009-0186-5

Hair Jr, J., Anderson, R. E., Tatham, R. L., & Black, W. C. (2005). *Análise multivariada de dados* (5th ed.). Porto Alegre: Bookman.

Hansen, C. J., Stevens, L. C., & Coast, J. R. (2001). Exercise duration and mood state: how much is enough to feel better? *Health Psychology*, *20*(4), 267–275.

Haumann, T., Güntürkün, P., Schons, L. M., & Wieseke, J. (2015). Engaging Customers in Coproduction Processes: How Value-Enhancing and Intensity-Reducing Communication Strategies Mitigate the Negative Effects of Coproduction Intensity. *Journal of Marketing*, *79*(6), 17–33. http://doi.org/10.1509/jm.14.0357

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression based approach*. New York: Guilford Press.

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology*, *60*(6), 895–910. http://doi.org/10.1037/0022-3514.60.6.895

Heidemeier, H., & Göritz, A. S. (2013). Perceived control in low-control circumstances: Control beliefs predict a greater decrease in life satisfaction following job loss. *Journal of Research in Personality*, *47*(1), 52–56. http://doi.org/10.1016/j.jrp.2012.11.002

Heidenreich, S., Wittkowski, K., Handrich, M., & Falk, T. (2015). The dark side of customer co-creation: exploring the consequences of failed co-created services. *Journal of the Academy of Marketing Science*, *43*(3), 279–296. http://doi.org/10.1007/s11747-014-0387-4

Hess Jr., R. L., Ganesan, S., & Klein, N. M. (2003). Service Failure and Recovery: The Impact of Relationship Factors on Customer Satisfaction. *Journal of the Academy of Marketing Science*, *31*(2), 127–145. http://doi.org/10.1177/0092070302250898

Hess Jr., R. L., Ganesan, S., & Klein, N. M. (2007). Interactional service failures in a pseudorelationship: The role of organizational attributions. *Journal of Retailing*, *83*(1), 79–95. http://doi.org/10.1016/j.jretai.2006.10.010

Houston, B. K. (1972). Control over stress, locus of control, and response to stress. *Journal of Personality and Social Psychology*, *21*(2), 249–255.

Huang, W.-H., Lin, Y.-C., & Wen, Y.-C. (2010). Attributions and Outcomes of Customer Misbehavior. *Journal of Business and Psychology*, *25*(1), 151–161. http://doi.org/10.1007/s10869-009-9137-x

Hui, M. K., & Bateson, J. E. G. (1991). Perceived Control and the Effects of Crowding and Consumer Choice on the Service Experience. *Journal of Consumer Research*, *18*(2), 174–184.

Hui, M. K., & Toffoli, R. (2002). Perceived Control and Consumer Attribution for the Service Encounter. *Journal of Applied Social Psychology*, *32*(9), 1825–1844. http://doi.org/10.1111/j.1559-1816.2002.tb00261.x

Hunt, D. M., Geiger-Oneto, S., & Varca, P. E. (2012). Satisfaction in the context of customer co-production: A behavioral involvement perspective. *Journal of Consumer Behaviour*, *11*(5), 347–356. http://doi.org/10.1002/cb

Joireman, J., Grégoire, Y., Devezer, B., & Tripp, T. M. (2013). When do customers offer firms a "second chance" following a double deviation? The impact of inferred firm motives on customer revenge and reconciliation. *Journal of Retailing*, *89*(3), 315–337. http://doi.org/10.1016/j.jretai.2013.03.002

Jong-Kuk, S., Min-Sook, P., Mi-Ok, O., & Mi-Ri, K. (2010). How do Customers Respond to Service Failure When They Participate in Service Co-creation? *International Journal of Arts and Sciences*, *3*(7), 444–455.

Kalamas, M., Laroche, M., & Makdessian, L. (2008). Reaching the boiling point: Consumers' negative affective reactions to firm-attributed service failures. *Journal of Business Research*, *61*(8), 813–824. http://doi.org/10.1016/j.jbusres.2007.09.008

Lazarus, R. S. (1991a). Cognition and motivation in emotion. *American Psychologist*, *46*(4), 352–367. http://doi.org/10.1037/0003-066X.46.4.352

Lazarus, R. S. (1991b). Progress on a cognitive-motivational-relational theory of emotion. *American Psychologist*, *46*(8), 819–834. http://doi.org/10.1037/0003-066X.46.8.819

Leland, D. S., & Paulus, M. P. (2005). Increased risk-taking decision-making but not altered response to punishment in stimulant-using young adults. *Drug and Alcohol Dependence*, *78*(1), 83–90. http://doi.org/10.1016/j.drugalcdep.2004.10.001

Lovelock, C., & Gummesson, E. (2004). Whither Services Marketing? In Search of a New Paradigm and Fresh Perspectives. *Journal of Service Research*, *7*(1), 20–41. http://doi.org/10.1177/1094670504266131

Lusch, R. F., & Vargo, S. L. (2006). Service-dominant logic: reactions, reflections and refinements. *Marketing Theory*, *6*(3), 281–288. http://doi.org/10.1177/1470593106066781

Lusch, R. F., Vargo, S. L., & O'Brien, M. (2007). Competing through service: Insights from service-dominant logic. *Journal of Retailing*, *83*(1), 5–18. http://doi.org/10.1016/j.jretai.2006.10.002

Marcatto, F., & Ferrante, D. (2008). The Regret and Disappointment Scale: An instrument for assessing regret and disappointment in decision making. *Judgment and Decision Making*, *3*(1), 87–99.

Martinez, L. M. F., Zeelenberg, M., & Rijsman, J. B. (2011). Behavioural consequences of regret and disappointment in social bargaining games. *Cognition and Emotion*, *25*(2), 351–360. http://doi.org/10.1080/02699931.2010.485889

McAuley, E., Duncan, T. E., & Russell, D. W. (1992). Measuring Causal Attributions: The Revised Causal Dimension Scale (CDSII). *Personality and Social Psychology Bulletin*, *18*(5), 566–573.

Mehrabian, A. (1997). Comparison of the PAD and PANAS as models for describing emotions and for differentiating anxiety from depression. *Journal of Psychopathology and Behavioral Assessment*, *19*(4), 331–357. http://doi.org/10.1007/BF02229025

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. Cambridge: The MIT Press.

Mezulis, A. H., Abramson, L. Y., Hyde, J. S., & Hankin, B. L. (2004). Is there a universal positivity bias in attributions? A meta-analytic review of individual, developmental, and cultural differences in the self-serving attributional bias. *Psychological Bulletin*, *130*(5), 711–747. http://doi.org/10.1037/0033-2909.130.5.711

Milliman, R. E. (1982). Using background music to affect the behavior of supermarket shoppers. *Journal of Marketing*, *46*(3), 86–91.

Milliman, R. E. (1986). The influence of background music on the behavior of restaurant patrons. *Journal of Consumer Research*, *13*(2), 286–289. http://doi.org/10.1086/209068

Mohanty, S. N., & Suar, D. (2014). Decision Making Under Uncertainty and Information

Processing in Positive and Negative Mood States. *Psychological Reports*, *115*(1), 91–105. http://doi.org/10.2466/20.04.PR0.115c16z2

Monahan, J. L., Murphy, S. T., & Zajonc, R. B. (2000). Subliminal mere exposure: specific, general, and diffuse effects. *Psychological Science*, *11*(6), 462–466. http://doi.org/10.1111/1467-9280.00289

Moschis, G. P. (2007). Stress and consumer behavior. *Journal of the Academy of Marketing Science*, *35*(3), 430–444. http://doi.org/10.1007/s11747-007-0035-3

Nijstad, B. A., & Stroebe, W. (2006). How the Group Affects the Mind: A Cognitive Model of Idea Generation in Groups. *Personal and Social Psychology Review*, *10*(3), 186–213. http://doi.org/10.1207/s15327957pspr1003

Noyes, R., & Kletti, R. (1977). Depersonalization in response to life-threatening danger. *Comprehensive Psychiatry*, *18*(4), 375–384. http://doi.org/10.1016/0010-440X(77)90010-4

Oakes, S., & North, A. C. (2008). Using music to influence cognitive and affective responses in queues of low and high crowd density. *Journal of Marketing Management*, *24*(5-6), 589–602.

Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, *17*(4), 460–469.

Ortony, A., Clore, G. L., & Foss, M. A. (1987). The Referential Structure of the Affective Lexicon. *Cognitive Science*, *11*(3), 341-364.

Pacheco, N. A., Lunardo, R., & dos Santos, C. P. (2013). A perceived-control based model to understanding the effects of co-production on satisfaction. *BAR - Brazilian Administration Review*, *10*(2), 219–238. http://doi.org/10.1590/S1807-76922013000200007

Parasuraman, A, Zeithmal, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, *49*(4), 44–51.

Peterson, C., Semmel, A., von Bayer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The Attributional Style Questionnaire. *Cognitive Therapy and Research*, *6*(3), 287–300.

Peterson, C., & Villanova, P. (1988). An Expanded Attributional Style Questionnaire. *Journal of Abnormal Psychology*, *97*(1), 87–89. http://doi.org/10.1037/0021-843X.97.1.87

Pieters, R. G., & Van Raaij, W. F. (1988). Functions and Management of Affect: Applications to Economic Behavior. *Journal of Economic Psychology*, *9*(2), 251–282.

Piguet, C., Dayer, A., Kosel, M., Desseilles, M., Vuilleumier, P., & Bertschy, G. (2010). Phenomenology of racing and crowded thoughts in mood disorders: A theoretical reappraisal. *Journal of Affective Disorders*, *121*(3), 189–198. http://doi.org/10.1016/j.jad.2009.05.006

Pittman, T. S., & Pittman, N. L. (1980). Deprivation of control and the attribution process. *Journal of Personality and Social Psychology*, *39*(3), 377–389. http://doi.org/10.1037/0022-3514.39.3.377

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903.

http://doi.org/10.1037/0021-9010.88.5.879

Prado, P. H. M., Souza, F. F., Ribeiro, E. B. S., & Santos, F. R. (2007). Emoções e Sentimentos: um Estudo Experimental no Consumo de Serviços de Webmail. In *Encontro Nacional dos Programas de Pós-Graduação em Administração* (pp. 1–16). Rio de Janeiro.

Prim, I., & Pras, B. (1999). "Friendly" Complaining Behaviors: Toward a Relational Approach. *Journal of Market-Focused Management*, *3*(3-4), 333–352.

Pronin, E. (2013). When the Mind Races: Effects of Thought Speed on Feeling and Action. *Current Directions in Psychological Science*, *22*(4), 283–288. http://doi.org/10.1177/0963721413482324

Pronin, E., & Jacobs, E. (2008). Thought Speed, Mood, and the Experience of Mental Motion. *Perspectives on Psychological Science*, *3*(6), 461–485. http://doi.org/10.1111/j.1745-6924.2008.00091.x

Pronin, E., Jacobs, E., & Wegner, D. M. (2008). Psychological effects of thought acceleration. *Emotion*, *8*(5), 597–612. http://doi.org/10.1037/a0013268

Pronin, E., & Wegner, D. M. (2006). Manic thinking - Independent effects of thought speed and thought content on mood. *Psychological Science*, *17*(9), 807–813. http://doi.org/10.1111/j.1467-9280.2006.01786.x

Raghunathan, R., & Trope, Y. (2002). Walking the tightrope between feeling good and being accurate: mood as a resource in processing persuasive messages. *Journal of Personality and Social Psychology*, *83*(3), 510–525. http://doi.org/10.1037/0022-3514.83.3.510

Richins, M. L. (1997). Measuring Emotions in the Consumption Experience. *Journal of Consumer Research*, *24*(2), 127–146.

Richins, M. L. (2013). When Wanting Is Better than Having: Materialism, Transformation Expectations, and Product-Evoked Emotions in the Purchase Process. *Journal of Consumer Research*, *40*(1), 1–18. http://doi.org/10.1086/669256

Rompay, T. J. L. Van, Galetzka, M., Pruyn, A. T. H., & Garcia, J. M. (2008). Human and Spatial Dimensions of Retail Density: Revisiting the Role of Perceived Control. *Psychology & Marketing*, *25*(4), 319–335. http://doi.org/10.1002/mar

Roschk, H., & Gelbrich, K. (2013). Identifying Appropriate Compensation Types for Service Failures: A Meta-Analytic and Experimental Analysis. *Journal of Service Research*, *17*(2), 195–211. http://doi.org/10.1177/1094670513507486

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the World and Changing the Self: A Two-Process Model of Perceived Control. *Journal of Personality and Social Psychology*, *42*(1), 5–37.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, *80*(1), 1–28. http://doi.org/10.1037/h0092976

Russell, D. (1982). The Causal Dimension Scale: A measure of how individuals perceive causes. *Journal of Personality and Social Psychology*, *42*(6), 1137–1145. http://doi.org/10.1037/0022-3514.42.6.1137

Saffrey, C., Summerville, A., & Roese, N. J. (2008). Praise for regret: People value regret above other negative emotions. *Motivation and Emotion*, *32*(1), 46–54. http://doi.org/10.1007/s11031-008-9082-4

Sanjuán, P., & Magallares, A. (2014). Coping Strategies as Mediating Variables Between Self-serving Attributional Bias and Subjective Well-Being. *Journal of Happiness Studies*, *15*(2), 443–453. http://doi.org/10.1007/s10902-013-9430-2

Schoefer, K., & Diamantopoulos, A. (2008). The Role of Emotions in Translating Perceptions of (In)Justice into Postcomplaint Behavioral Responses. *Journal of Service Research*, *11*(1), 91–103. http://doi.org/10.1177/1094670508319091

Schuettler, D., & Kiviniemi, M. T. (2006). Does how I feel about it matter? The role of affect in cognitive and behavioral reactions to an illness diagnosis. *Journal of Applied Social Psychology*, *36*(11), 2599–2618. http://doi.org/10.1111/j.0021-9029.2006.00118.x

Sherman, D. K., Cohen, G. L., Nelson, L. D., Nussbaum, A. D., Bunyan, D. P., & Garcia, J. (2009). Affirmed yet unaware: exploring the role of awareness in the process of self-affirmation. *Journal of Personality and Social Psychology*, *97*(5), 745–764. http://doi.org/10.1037/a0015451

Shimanoff, S. B. (1984). Commonly Named Emotions in Everyday Conversations. *Perceptual and Motor Skills*, *58*(2), 514–514. http://doi.org/10.2466/pms.1984.58.2.514

Singh, J. (1988). Consumer complaint intentions and behavior: definitional and taxonomical issues. *Journal of Marketing*, *52*(1), 93–107.

Singh, J. (1989). Determinants of Consumers' Decisions to Seek Third Party Redress: An Empirical Study of Dissatisfied Patients. *Journal of Consumer Affairs*, *23*(2), 329-363.

Sirois, F. M., Davis, C. G., & Morgan, M. S. (2006). "Learning to live with what you can't rise above": control beliefs, symptom control, and adjustment to tinnitus. *Health Psychology*, *25*(1), 119–123. http://doi.org/10.1037/0278-6133.25.1.119

Skinner, E. A. (1996). A Guide to Constructs of Control. *Journal of Personality and Social Psychology*, *71*(3), 549–570.

Smit, H. J., & Rogers, P. J. (2000). Effects of low doses of caffeine on cognitive performance, mood and thirst in low and higher caffeine consumers. *Psychopharmacology*, *152*(2), 167–173.

Smith, C. A., Haynes, K. N., Lazarus, R. S., & Pope, L. K. (1993). In search of the" hot" cognitions: attributions, appraisals, and their relation to emotion. *Journal of Personality and Social Psychology*, *65*(5), 916–929.

Smith, C. A., & Lazarus, R. S. (1993). Appraisal components, core relational themes, and the emotions. *Cognition & Emotion*, *7*(3–5), 233–269. http://doi.org/10.1080/02699939308409189

Spreng, R. A., Mackenzie, S. B., & Olshavsky, R. W. (1996). A Reexamination of the Determinants of Consumer Satisfaction. *Journal of Marketing*, *60*(3), 15–32. http://doi.org/10.2307/1251839

Stephens, N., & Gwinner, K. P. (1998). Why Don't Some People Complain? A Cognitive-Emotive Process Model of Consumer Complaint Behavior. *Journal of the Academy of Marketing Science*, *26*(3), 172–189.

Strizhakova, Y., Tsarenko, Y., & Ruth, J. A. (2012). "I'm Mad and I Cant Get That Service Failure Off My Mind'': Coping and Rumination as Mediators of Anger Effects on Customer Intentions. *Journal of Service Research*, *15*(4), 414–429. http://doi.org/10.1177/1094670512443999

Taylor, S. (1994). Waiting for service: The relationship between delays and evaluations of service. *Journal of Marketing*, *58*(2), 56–69. http://doi.org/10.2307/1252269

Thompson, S. C. (1981). Will it hurt less if i can control it? A complex answer to a simple question. *Psychological Bulletin*, *90*(1), 89–101.

Trope, Y., Ferguson, M., & Raghunathan, R. (2001). Mood as a resource in processing self-relevant information. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 256–274). Mahwah: Lawrence Erlbaum Associates Publishers.

Tsiros, M., Mittal, V., & Ross, Jr., W. T. (2004). The Role of Attributions in Customer Satisfaction: A Reexamination. *Journal of Consumer Research*, *31*(2), 476–483. http://doi.org/10.1086/422124

Van Dijk, W. W., & Zeelenberg, M. (2002). Investigating the Appraisal Patterns of Regret and Disappointment. *Motivation and Emotion*, *26*(4), 321–331.

Van Vaerenbergh, Y., Orsingher, C., Vermeir, I., & Larivière, B. (2014). A meta-analysis of relationships linking service failure attributions to customer outcomes. *Journal of Service Research*, *17*(4), 381–398. http://doi.org/10.1177/1094670514538321

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, *68*(1), 1–17.

Vermunt, R., van Knippenberg, D., van Knippenberg, B., & Blaauw, E. (2001). Self-esteem and outcome fairness: differential importance of procedural and outcome considerations. *The Journal of Applied Psychology*, *86*(4), 621–628. http://doi.org/10.1037/0021-9010.86.4.621

Volz, K. G., Schubotz, R. I., & Von Cramon, D. Y. (2004). Why am I unsure? Internal and external attributions of uncertainty dissociated by fMRI. *NeuroImage*, *21*(3), 848–857. http://doi.org/10.1016/j.neuroimage.2003.10.028

Wallston, K. A., Wallston, B. S., Smith, S., & Dobbins, C. J. (1987). Perceived control and health. *Current Psychology*, *6*(1), 5–25. http://doi.org/10.1007/BF02686633

Walsh, R. M., & Bruce, S. E. (2011). The relationships between perceived levels of control, psychological distress, and legal system variables in a sample of sexual assault survivors. *Violence against Women*, *17*(5), 603–618. http://doi.org/10.1177/1077801211407427

Walster, E., Berscheid, E., & Walster, G. W. (1973). New directions in equity research. *Journal of Personality and Social Psychology*, *25*(2), 161–176.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–70.

Watson, L., & Spence, M. T. (2007). Causes and consequences of emotions on consumer behaviour: A review and integrative cognitive appraisal theory. *European Journal of Marketing*, *41*(5-6), 487–511. http://doi.org/10.1108/03090560710737570

Weary, G., & Jacobson, J. A. (1997). Causal uncertainty beliefs and diagnostic information seeking. *Journal of Personality and Social Psychology*, *73*(4), 839–848. http://doi.org/10.1037/0022-3514.73.4.839

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, *92*(4), 548–573.

Weiner, B. (1995). *Judgments of responsibility: A foundation for a theory of social conduct*. New York: Guilford Press.

Weiner, B. (2000). Attributional Thoughts about Consumer Behavior. *Journal of Consumer Research*, *27*(3), 382–387.

Weiner, B. (2010). The Development of an Attribution-Based Theory of Motivation: A History of Ideas. *Educational Psychologist*, *45*(1), 28–36. http://doi.org/10.1080/00461520903433596

Wiles, J. A., & Cornwell, T. B. (1991). A Review of Methods Utilized in Measuring Affect, Feelings, and Emotion in Advertising. *Current Issues and Research in Advertising*, *13*(1-2), 241–275.

Winkielman, P., & Cacioppo, J. T. (2001). Mind at ease puts a smile on the face: psychophysiological evidence that processing facilitation elicits positive affect. *Journal of Personality and Social Psychology*, *81*(6), 989–1000. http://doi.org/10.1037/0022-3514.81.6.989

Wirtz, J., & Mattila, A. S. (2004). Consumer responses to compensation, speed of recovery and apology after a service failure. *International Journal of Service Industry Management*, *15*(2), 150–166. http://doi.org/10.1108/09564230410532484

Yang, K., Friedman-Wheeler, D. G., & Pronin, E. (2014). Thought acceleration boosts positive mood among individuals with minimal to moderate depressive symptoms. *Cognitive Therapy and Research*, *38*(3), 261–269. http://doi.org/10.1007/s10608-014-9597-9

Yen, H. R., Gwinner, K. P., & Su, W. (2004). The impact of customer participation and service expectation on locus attributions following service failure. *International Journal of Service Industry Management*, *15*(1), 7–26. http://doi.org/10.1108/09564230410523312

Yi, S., & Baumgartner, H. (2004). Coping With Negative Emotions in Purchase-Related Situations. *Journal of Consumer Psychology*, *14*(3), 303–317.

Zeelenberg, M., & Breugelmans, S. M. (2008). The role of interpersonal harm in distinguishing regret from guilt. *Emotion*, *8*(5), 589–596. http://doi.org/10.1037/a0012894

Zeelenberg, M., Nelissen, R. M. A., Breugelmans, S. M., & Pieters, R. (2008). On emotion specificity in decision making: Why feeling is for doing. *Judgment and Decision Making*, *3*(1), 18–27.

Zeelenberg, M., & Pieters, R. (1999). Comparing Service Delivery to What Might Have Been Behavioral Responses to Regret and Disappointment. *Journal of Service Research*, *2*(1), 86–97.

Zeelenberg, M., & Pieters, R. (2004). Beyond valence in customer dissatisfaction. *Journal of Business Research*, *57*(4), 445–455. http://doi.org/10.1016/S0148-2963(02)00278-3

Zeelenberg, M., & Pieters, R. (2007). A Theory of Regret Regulation 1.0. *Journal of Consumer Psychology*, *17*(1), 3–18.

Zeelenberg, M., van Dijk, W. W., Manstead, A. S. R., & der Pligt, J. (1998). The Experience of Regret and Disappointment. *Cognition & Emotion*, *12*(2), 221–230. http://doi.org/10.1080/026999398379727

Zeelenberg, M., Van Dijk, W. W., Manstead, A. S. R., & van der Pligt, J. (2000). On bad decisions and disconfirmed expectancies: The psychology of regret and

disappointment. *Cognition and Emotion*, *14*(4), 521–541.

Zeelenberg, M., van Dijk, W. W., van der Pligt, J., Manstead, A. S., Van Empelen, P., & Reinderman, D. (1998). Emotional Reactions to the Outcomes of Decisions: The Role of Counterfactual Thought in the Experience of Regret and Disappointment. *Organizational Behavior and Human Decision Processes*, *75*(2), 117–141.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing*, *60*(2), 31–46.

Zhao, X., Lynch Jr., J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research*, *37*(2), 197–206. http://doi.org/10.1086/651257